Public Service Commission,NTS,PTS,BTS,OTS & ETEA MCQs

MCQs

NUTRITION & FOOD SCIENCE

Guide

For

District Nutrition Officer **Nutritionist** **Entomologist**

Food Safety Officer **Assistant Food Safety Officer** **Enforcement Officer**

Food Inspector **Food Supervisor** **GAT (Subject) & NTS**

School Health Nutrition Supervisor **Nutrition and Dietics**

All Jobs of Food & Nutrition

According to the Syllabus of:

- Federal Public Service Commission
- Punjab Public Service Commission
- KPK Public Service Commission
- Sindh Public Service Commission
- Balochistan Public Service Commission
- AJ&K Public Service Commission
- Gilgit Baltistan Public Service Commission
- NTS, GAT(Subject), PTS, BTS, OTS & ETEA

NEW Syllabus

Nasir Mahmood
M.Sc. (Food Technology)

by

M. Sohail Bhatti
Advocate Supreme Court of Pakistan

Mohsan Khan Poomro

PUBLIC SERVICE COMMISSION & NTS, OTS, PTS, BTS, GTS, JTS, ETEA MCQ's SERIES

Mohsan Soomro86

MCQs

Nutrition Officer Guide

MOHSAN KHAN SOOMRO

for

District Nutrition Officer ◆ Nutritionist ◆ School Health Nutrition Supervisor ◆ Nutrition Assistant ◆ Entomologist ◆ Nutrition and Dietics ◆ GAT (Subject) & NTS, PTS, BTS, ETEA, FPSC, PPSC, SPSC, BPSC, KP Public Service Commission, AJ&K Public Service Commission and all other Posts of Food and Nutrition

by

Zubaida Ejaz M.Sc. (Nutrition)	**M. Sohail Bhatti** *Advocate Supreme Court of Pakistan*

BHATTI SONS PUBLISHERS
stan Plaza Urdu Bazar Lahore
Ph: 042-37323004

Nutrition And Food Scienc
Nasir Mahmood And
0 000000564878
600.00 Rs

SAEED BOOK BANK
Leading Importers, Exporters, Distributors, Booksellers & Publishers of Pakistan
F-7 Jinnah Super Market, Islamabad-Pakistan.
Tel: 92-51-2651656-9, Fax: 92-51-2651660
E-mail : info@saeedbookbank.com
Web : www.saeedbookbank.com

Mohsan

Mohsan Khan Soomro

CONTENTS

NUTRITION – MCQs

1. Basics of Food Science and Nutrition 07
2. Definition 07
3. Carbohydrates 14
4. Proteins 20
5. Fats and Oils 23
6. Acids 27
7. Minerals 28
8. Vitamins 29
9. Water 31
10. Pigments 32
11. Enzymes 33
12. Cereals 37
13. Pulses and Oilseeds 38
14. Egg, Fish, Poultry and Meat 38
15. Vegetables 40
16. Fruits 40
17. Spices 41
18. Food Processing 42
19. **Microbiology:** Nutrition of Bacteria 42
20. Nutrition, Food and Food Nutrients 45
21. Health Care 62
22. Classification of Food 69
23. Diseases and Cure 81
24. Medicine & Treatment 93
25. Effects of Nutrition of Human Health 96
26. Fats, Carbohydrates Proteins, Vitamins Minerals and Enzymes 103
27. Metabolism & Nutritional Physiology 110
28. Vitamins at a Glance 111
29. Nutrition and Health Care (Review) 117
30. Diet & Nutrition 124
31. Sports Nutrition 129

BIOCHEMISTRY – FOOD AND NUTRITION

32. General 141
33. The Cell 141
34. Carbohydrate Chemistry 142
35. Lipid Chemistry 143
36. Protein Chemistry 144
37. Nucleoprotein Chemistry 146
38. Enzymes 147
39. Vitamins 148
40. Biological Oxidation 150
41. Immunoglobulin's 151
42. Carbohydrate Metabolism 152
43. Lip Metabolism 156
44. Protein Metabolism 158
45. Amino Acid Metabolism 160
46. Nucleoprotein Metabolism 161
47. Porphyrin Metabolism 164
48. Mineral Metabolism 165
49. Nutrition 166
50. Genetics and Molecular Biology 167
51. Hormones 169
52. Cancer 171
53. Acid – Base Balan 171
54. Water and Electrolyte Balance 172
55. Organ Function Tests 173
56. Techniques 174

57.	Environmental health Hazards	175
58.	Detoxication	176
59.	Biochemistry MCQs of Vitamins, Minerals & Nutrition	178
60.	Nutrition, Therapeutics and Health	182
61.	Malnutrition	183
62.	Previous Solved MCQs Asked in Different Exams of One Paper Tests conducted by: NTS, PTS, BTS, OTS, GTS, ETEA, PPSC, FPSC, KPSC, AJ&K PSC, SPSC, BPSC	186
63.	Solved Model Papers for All Exams Related to Food Science and Nutrition	213
64.	Glossary of Nutrition and Food Sciences	222

GENERAL ENGLISH – MCQS
English Grammar and Communication Skill

1.	Sentence Completion Test	233
2.	Synonyms – MCQs with Answers	239
3.	Antonyms – MCQs with Answers	260
4.	Passage Completion Test	374
5.	Sentence Structure and Improvement Test	281
6.	Comprehension Test	291
7.	Sentence Completion (Previous Solved MCQs)	307

PAKISTAN STUDIES / AFFAIRS

◆	Model Papers for Different Exams (1 to 30)	319

ISLAMIC STUDIES – MCQs

◆	Important Solved MCQs on Islamic Studies	351

EVERYDAY SCIENCE AND GENERAL KNOWLEDGE

◆	Important MCQs on Everyday Science and GK	358

INFORMATION TECHNOLOGY / COMPUTER SCIENCE

◆	Important MCQs on Basic Computer Knowledge	395

BASIC MATHEMATICS / ARITHMETIC'S

◆	Prime Numbers	426
◆	Understanding Number	434
◆	Simplification – Fractions	437
◆	Ratio and Proportions	440
◆	Percentage	444
◆	Profit and Loss	447
◆	Simple Interest and Compound Interest	450
◆	Time and Work	452
◆	Discount, Stock and Shares	455
◆	Mensuration	456
◆	Income Tax, Insurance and Bankruptcy	459
◆	Analogies	460
◆	Number Series	471
◆	Similarities and Differences	477
◆	Discrimination	479
◆	Relationship Concepts	481
◆	Problems Solving	495
◆	Analytical Reasoning	499

CURRENT AFFAIRS / GENERAL KNOWLEDGE

◆	Important MCQs on Current Affairs / General Knowledge	502

BASICS OF FOOD SCIENCE AND NUTRITION

Definitions

Nutrition: It is science of food and it is related to health.

Food: Food is a substance that living beings eat to satiate their hunger.

Nutrients: Nutrients are the organic and inorganic complexes contained in foods that are responsible for the function of foods and protects the body from disorders.

There are about 50 kinds of nutrients. Each nutrient has specific function in the body. Most natural foods contain more than one nutrient. In addition to water and fibers in diet, there are five major nutrients in diet.

Diet: A diet may be defined as "the kind of food on which a person or group lives".

Balanced Diet: It is defined as "a diet which contains variety of foods in such quantities and proportions that need for energy, amino acids, vitamins, minerals, fats, carbohydrates and other nutrients is adequately met for maintaining health, vitality and general well-being and also makes a small provision for extra nutrients to withstand short duration of leanness".

Malnutrition or malnourishment is a condition that results from eating a diet in which nutrients are either not enough or are too much such that the diet causes health problems. It may involve calories, protein, carbohydrates, vitamins or minerals.

What are the basic food groups?

Foods from the basic food groups provide the nutrients essential for life and growth. These foods are also known as 'everyday foods'. Each of the food groups provides a range of nutrients, and all have a role in helping the body function. In particular, vegetables, legumes and fruit protect against illness and are essential to a healthy diet.

The basic food groups are:

- breads, cereals, rice, pasta, noodles and other grains
- vegetables and legumes
- fruit
- milk, yoghurt, cheese and/or alternatives
- lean meat, fish, poultry, eggs, nuts and legumes.

A balanced diet includes a variety of foods from each of the five food groups, and offers a range of different tastes and textures. It is important to choose most of the foods we eat each day from these food groups.

'Sometimes foods' on the other hand have little nutritional value and are not essential for good health. Limit the amount of these foods offered to your child.

Food for Health: Dietary Guidelines for Children and Adolescents in Australia

Encourage and support breastfeeding.

Children and adolescents need sufficient nutritious foods to grow and develop normally.

- Growth should be checked regularly for young children.
- Physical activity is important for children and adolescents.

Enjoy a wide range of nutritious foods.

- Children and adolescents should be encouraged to:
- eat plenty of vegetables, legumes and fruits
- eat plenty of cereals (including breads rice, pasta and noodles), preferably wholegrain
- include lean meat, fish, poultry and/or alternatives
- include milks, yoghurts, cheeses and/or alternatives. Reduced-fat milks are not suitable for children under two years, because of their high energy needs, but reduced-fat varieties should be encouraged for older children and adolescents
- choose water as a drink and care should be taken to:

- limit saturated fat and moderate total fat intake. Low-fat diets are not suitable for infants
- choose foods low in salt
- consume only moderate amounts of sugars and foods containing added sugars.

Care for your child's food: prepare and store it safely:

Breads, cereals, rice, pasta, noodles and other grains

Breads, cereals, rice, pasta, noodles and other grain-based foods provide carbohydrates, which the body uses for energy. The best choices from this group are wholemeal and wholegrain breads, cereals and savoury biscuits. Other good choices include brown rice, couscous, wholegrain pasta and polenta.

Vegetables, legumes and fruit:

Fruit and vegetables provide vitamins, minerals and fibre, and should be included in meals and snacks each day. Choose a variety of fruits, vegetables and legumes (including different colours, textures and flavours) to provide a wide range of vitamins and minerals.

Milk, yoghurt, cheese and/or alternatives

Plain milk, cheese and yoghurt are the most common dairy foods, and main dietary sources of calcium. Having enough calcium is important for healthy bones and teeth.

Milk is not recommended for babies under 12 months, but small amounts in breakfast cereal, and other dairy products such as yoghurt, custard and cheese, can be given after nine months. Full-cream plain milk is recommended for children aged one to two years, and reduced-fat plain milk is suitable for children over the age of two years. If children do not drink cow's milk, or eat cow's milk products, they can have a calcium-fortified soy drink instead. Rice and oat milks are not recommended and should only be given to children after medical advice.

Lean meat, fish, poultry, eggs, nuts and legumes:

This group includes red meat (such as beef, lamb and kangaroo), white meat (such as pork, chicken and turkey), fish and eggs. Non-animal products in this group include nuts, legumes and tofu. Meat and its alternatives are rich in protein, iron and zinc, and essential for children's growth and development. It is best to choose lean meat and skinless poultry to ensure children's diets do not contain too much fat.

Vegetarian and vegan eating practices:

Some families follow vegetarian eating practices. Usually this means avoiding animal products such as meat, poultry and fish. Many vegetarians still eat some animalrelated products such as eggs, milk, cheese and yoghurt.

It is especially important that vegetarians eat a variety of legumes, nuts, seeds and grain-based foods, to gain the same nutrients that meat, poultry and fish would otherwise provide.

Vegans do not eat any foods that have an animal origin. It is very difficult to meet children's nutritional needs with a vegan diet, because the amount of food needed for sufficient nutrients may be too large for the child to manage. Plan carefully if your family follows a vegan diet, and consult an Accredited Practising Dietitian to ensure that your child's nutritional requirements are met.

What are 'sometimes foods'?

'Sometimes foods' are high in fat, sugar and/or salt. They typically have very little nutritional value and are often processed and packaged. There is no need to offer sometimes foods to children on a regular basis.

Examples of sometimes foods include:

- chocolate and confectionary
- sweet biscuits, chips and high-fat savoury biscuits
- fried foods

- pastry-based foods such as pies, sausage rolls and pasties
- fast food and takeaway foods
- cakes and ice cream
- soft drinks, fruit juice, fruit drinks, cordial, sports drinks, energy drinks, flavoured milk and flavoured mineral water.

Classification of Nutrients:

Nutrients can be divided into 2 categories: macronutrients, and micronutrients. Macronutrients are those nutrients that the body needs in large amounts. These provide the body with energy (calories). Micronutrients are those nutrients that the body needs in smaller amounts. Click on the links below to discover the functions, recommended dietary intake, and food sources of the different nutrients our bodies need.

Macronutrients:

- Carbohydrates
- Proteins
- Fats

Water Soluble Vitamins:

- Vitamin B1
- Vitamin B2
- Vitamin B6
- Vitamin B12
- Vitamin C
- Folic Acid

Fat Soluble Vitamins:

- Vitamin A
- Vitamin D
- Vitamin E
- Vitamin K

Minerals:

- Calcium
- Potassium
- Sodium
- Iron
- Zinc

Water:

- Water

CARBOHYDRATES

Role in the Body:

1. Fuel during high intensity exercise
2. Spares protein (to preserve muscle mass during exercisee)
3. Fuel for the Central Nervous System (your brain!)

Recommended Allowance:

1. Sedentary Individuals: 40-50% of your total daily calories should be carbohydrates
2. Exercises Regularly: 60% of your total daily calories should be carbohydrates
3. Athletes or persons involved in heavy training: 70% of your total daily calories should be carbohydrates (3.5-4.5 grams of carbohydrate per pound of body weight)

NOTE: 1 gram of carbohydrate = 4 Calories

Food Sources:

1. Grains (choose mostly whole grains for added benefits)
2. Dairy (choose low-fat or non-fat most often)
3. Fruit (choose whole fruits more often than fruit juices)

PROTEINS

Role in the Body:

1. Tissue structure (part of organ tissues, muscle, hair, skin, nails, bones, tendons, ligaments and blood plasma)
2. Part of cell plasma membranes
3. Involved in metabolic, transport, and hormone systems
4. Make up enzymes that regulate metabolism
5. Invovled in acid/base balance to maintain a neutral environment in our bodies

Recommended Daily Allowance

1. Sedentary Individuals: 0.36 grams of protein per pound of body weight
2. Recreationally Active: 0.45-0.68 grams of protein per pound of body weight
3. Competitive Athlete: 0.54-0.82 grams of protein per pound of body weight

4. Teenage Athlete: 0.82-0.91 grams of protein per pound of body weight
5. Body Builder: 0.64-0.91 grams of protein per pound of body weight
6. When restricting Calories: 0364-0.91 grams of protein per pound of body weight
7. Maximum amount of protein the body can utilize: 0.91 grams of protein per pound of body weight

NOTE: 1 gram of protein = 4 Calories

Food Sources:

1. Legumes (beans)
2. Lentils
3. Soy products, such as tofu
4. Peanuts and nuts
5. Whole grains (quinoa, oats, brown rice)
6. Seeds
7. Meat alternative products
8. Some vegetables
9. Animal sources

FATS

Role in the Body:

1. Energy reserve
2. Protects vital organs
3. Insulation
4. Transport fat soluble vitamins

Recommended Allowance:

1. 20-35% of your total daily calories should come from fat

Less than 10% of total daily calories should come from Saturated Fat (coconut and plam kernal oil, shortening, butter, cream cheese, full fat dairy products)

NOTE: 1 gram of fat = 9 Calories

Food Sources:

1. Oils
2. Nuts
3. Seeds
4. Meat, fish, dairy
5. Micronutrients

VITAMIN B_1: THIAMIN

Function:

1. Needed to release energy in food
2. Prevents beriberi

Food Sources:

1. Whole grains
2. Dried beans
3. Peas
4. Peanuts
5. Animal proteins

VITAMIN B_2: RIBOFLAVIN

Function:

1. Needed to build and maintain body tissues

Food Sources:

1. Whole grains
2. Green and yellow vegetables
3. Animal proteins

VITAMIN B_6: PYRIDOXINE

Function:

1. Helps the development of the nervous system
2. Involved in the production of blood
3. Helps break down protein and glucose to produce energy for the body

Food Sources:

1. Potatoes
2. Chickpeas
3. Yeast
4. Nuts
5. Bulgur
6. Fish
7. Rice
8. Bananas

VITAMIN B_{12}: COBALAMINE

Function:

1. Promotes proper growth and development of the nervous system

Food Sources:

1. Fortified cereals
2. Nutritional yeast
3. Algae
4. Animal products

VITAMIN C: ASCORBIC ACID

Function:

1. Helps form growth hormones
2. Needed to build strong gums, teeth, and bones
3. Antioxidant

Food Source:

1. Citrus fruits
2. Cabbage
3. Berries
4. Peppers

FOLIC ACID

Function:

1. Helps build DNA and protein
2. Helps maintain intestinal tract
3. Aids in bone growth
4. Prevents nervous system birth defects

Food Sources:

1. Dark green leafy vegetables
2. Yeast
3. Wheat germ

VITAMIN A: RETINAL

Function:

1. Vision
2. Healthy skin
3. Healthy hair

Food Sources:

1. Animal products
2. Body can make vitamin A from vegetables that have carotene
3. Carrots
4. Sweet potatoes
5. Other red-orange vegetables

VITAMIN D

Function:

1. Promotes strong teeth and bones
2. Prevents rickets

Food Sources:

1. Mushrooms
2. Dairy Milk & Fortified Non-Dairy Milk
3. Fortified cereals
4. Cod liver oil
5. Tuna
6. Salmon
7. Egg yolks
8. Produced by the body when exposed to sunlight

VITAMIN E

Function:

1. Prevents damage to cell membranes
2. Protects vitamin A
3. Aids in blood production

Food Sources:

1. Seeds and Nuts
2. Vegetable oil

VITAMIN K

Function:

1. Aids in blood clotting

Food Sources:

1. Green leafy vegetables
2. Produced by bacteria in the large intestine

CALCIUM

Function:

1. Maintains teeth and bones
2. Helps blood clot
3. Helps nerves and muscles function

Food Sources:

1. Dairy Milk & Fortified Non-Dairy Milks
2. Dark green vegetables
3. Sardines
4. Clams
5. Oysters
6. Legumes
7. Almonds

POTASSIUM

Function:

1. Regulates water balance in cells
2. Helps nerves function
3. Important for heart rhythm

Food Sources:

1. Oranges
2. Bananas
3. Cereal
4. Potatoes
5. Dried beans

SODIUM

Function:

1. Regulates water balance
2. Stimulates nerves

Food Sources:

1. Table salt
2. Bread
3. Almost everything

IRON

Function:

1. Forms blood cells

2. Transports oxygen throughout the body

Food Sources:

1. Dark green vegetables
2. Whole-grain cereals
3. Whole grains, such as brown rice & quinoa
4. Legumes
5. Lentils
6. Nuts
7. Seeds
8. Dried fruits
9. Animal proteins

ZINC

Function:

1. Aids in transport of carbon dioxide
2. Aids in healing wounds
3. Forms enzymes

Food Sources:

1. Whole grains
2. Dairy Milk & Fortified Non-Dairy Milks
3. Legumes

WATER

Functions:

1. Moistens tissues such as those in the mouth, eyes, and nose
2. Protects body organs and tissues
3. Helps prevent constipation
4. Helps dissolve minerals and other nutrients to make them accessible to the body
5. Regulates body temperature
6. Lubricates joints
7. Lessens the burden on the kidneys and liver by flushing out waste products
8. Carries nutrients and oxygen to cells

MCQs

Tick the correct one:

1. The graphically-represented, food-based guidance tools designed to help people make healthful food choices is known as:
   (a) Food guide pyramids
   (b) Food guide triangles
   (c)✓ Food guide rectangles
   (d) None of these

2. ______ deals with the causes, prevention and communication dealing with food borne illness:
   (a) Food guide
   (b) Food hygiene
   (c) Food microbiology
   (d)✓ Food safety

3. Preservation of food helps in:
   (i) increasing the shelf-life of foods, thus increasing the supply.
   (ii) making the seasonal food available throughout the year.
   (iii) adding variety to the diet.
   (iv) saving time by reducing preparation time and energy
   In the above statements the following are true.
   (a) and 2 but not 3 and 4
   (b) 1,2 and 3 but not 4
   (c) 1,2 and 4 but not 3
   (d)✓ 1,2,3and4

4. There are several causes of food spoilage. These are:
   (i) Growth of microorganisms, which bring undesirable changes in food.
   (ii) Action of enzymes present in the food.
   (iii) Oxidative reactions in the food.
   (iv) Mechanical damage to the food (e.g., bruising of apples, bananas, mangoes, tomatoes).
   (v) Damage due to pests (e.g., insects and rodents).
   In the above statements, the following are true.
   (a) 1,2 and 3 but not 4 and 5
   (b) 1,2,3 and 4 but not 5
   (c)✓ 1,2,3,4 and 5
   (d) 1 and 2 but not 3, 4 and 5

5. Biotic deterioration refers to changes in a food product brought about by:
   (a) Biological functions (e.g. ripening of fruit, respiration of vegetables).

(b) Attack by microorganisms (e.g. molds, bacteria, and yeasts).
(c)✓ Either by a biological function (e.g. ripening of fruit, respiration of vegetables) or attack by microorganisms (e.g. molds, bacteria, and yeasts) or both.
(d) Only respiration of the tissues.

6. When someone gets sick from eating food or drink that has gone bad or is contaminated, then it is known as:
(a) Food infection
(b) Food intoxication
(c)✓ Food poisoning
(d) Food spoilage

7. When the food contains bacteria or other microbes which infect the body after it is eaten, it is known as:
(a)✓ Food infection
(b) Food intoxication
(c) Food poisoning
(d) None of the above

8. When the food contains toxins, it is known as:
(a) Food infection
(b)✓ Food intoxication
(c) Food poisoning
(d) Food spoilage

9. Sugar cane is a tall giant ______
(a) Herb (b)✓ Grass
(c) Shrub (d) Tree

10. Ginger is a:
(a) Fruit (b)✓ Stem
(c) Root (d) None of these

11. Potato that we eat is a:
(a) Fruit (b)✓ Stem
(c) Root (d) None of these

12. Carrot and radish that we eat are:
(a) Fruits (b) Stems
(c)✓ Roots (d) None of these

13. Cauliflower is a:
(a) Fruit (b) Stem
(c)✓ Flower (d) None of these

14. The word is used to indicate all foods, which are consumed in liquid form.
(a) Soft drinks (b)✓ Beverage
(c) Sherbets (d) RTS

15. Basal Metabolic Rate (BMR) is the ______ required for activity of internal organs when man is on complete rest (no work):
(a) Food (b)✓ Energy
(c) Oxygen (d) Water

16. Persons engaged in hard physical work need more ______ than those engaged in sedentary work:
(a) Calories (b) B-vitamins
(c)✓ Calories and B-vitamins
(d) None of these

17. An average man (60 kg body weight with moderate work) requires ______ kcal/day:
(a) 2320 (b)✓ 2730
(c) 3490 (d) 4500

18. 70-80 % of total energy requirement of our body is obtained from ______ that we eat:
(a)✓ Carbohydrate
(b) Protein
(c) Fat (d) Vitamin

19. Malnutrition is:
(a) Lack of nutrition
(b) Excess of nutrition
(c) Imbalance of nutrition
(d)✓ All of the above

20. ______ is an acute form of childhood protein- energy malnutrition.
(a) Marasmus
(b)✓ Kwashiorkor
(c) Diphtheria (d) Beriberi

21. ______ is a form of severe malnutrition characterized by energy deficiency:
(a)✓ Marasmus (b) Kwashiorkor
(c) Diphtheria (d) Goitre

22. Which of the following is not a function?
(a) Supply energy
(b) Provide materials for growth and repair of tissues

(c) Control and regulate the body processes
(d)✓ None of these

23. In ______, one of the hydrogen atoms of a hydrocarbon molecule has been replaced hydroxyl (OR) group:
(a) An ester
(b) A fatty acid
(c)✓ An alcohol
(d) A carbohydrate

24. Which of the following is a constituent of alcoholic beverages?
(a) Methyl alcohol (CH_3OH)
(b)✓ Ethyl alcohol (C_2H_5OH)
(c) Isomethyl alcohol
(d) Isopropyl alcohol

25. Most of the acids occurring in foods have a hydrogen atom in a hydrocarbon replaced by a ______ group:
(a)✓ Carboxyl (b) Methyl
(c) Hydroxyl (d) Hydrogen

CARBOHYDRATES

26. Compounds of carbon and hydrogen are known as:
(a) Fats
(b) Carbohydrates
(c)✓ Hydrocarbon
(d) Esters

27. Among different nutrients from food, ______ give the highest yields of energy per unit land cultivated:
(a) Fats
(b)✓ Carbohydrates
(c) Proteins (d) None of these

28. Carbohydrates contain the elements ______
(a) Carbon and hydrogen
(b) Carbon and oxygen
(c) Carbon, hydrogen, oxygen and nitrogen
(d)✓ Carbon, hydrogen and oxygen

29. All green plants synthesize ______ by the process of photosynthesis:
(a) Fat
(b)✓ Carbohydrates
(c) Protein (d) None of these

30. Carbohydrates are formed in plants from ______
(a)✓ Carbon dioxide and water by photosynthesis using the energy of sun.
(b) Oxygen and water by photosynthesis using the energy of sun.
(c) Oxygen and water by chemosynthesis.
(d) Carbon dioxide and water by chemosynthesis using the energy of sun.

31. ______ provides the energy needed to transform the carbon dioxide and water into carbohydrates:
(a) Oxygen (b)✓ Sunlight
(c) Chemical reaction
(d) Photosynthesis

32. The equation for synthesis of carbohydrate in plants is given as:
(a)✓ $6CO_2 + 12H_2O\ C_6H_{12}O_6 + 6O_2 + 6H_2O$
(b) $6C_2 + 6H_2O\ C_6H_{12}\ O_6 + 6H_2O$
(c) $6CO_2 + 6H_2O\ C_6H_{12}\ O_6 + 6O_2 + 6H_2O$
(d) $6CO_2 + 12H_2\ CO_3\ C_6H_{12}\ O_6 + 6O_2 + 6H_2O$

33. The solar energy used in photosynthesis is stored as energy in the form of carbohydrates (starch, sugar) in the plant:
(a) Mechanical (b) Physical
(c)✓ Chemical (d) None of these

34. Each gram of carbohydrate supplies ______ to the body:
(a) 2 kilocalories
(b)✓ 4 kilocalories
(c) 6 kilocalories
(d) 8 kilocalories

35. The ______ are the quickest, and ______ the slowest in supplying energy:
(a) Proteins fats
(b) Fats carbohydrate

(c)✓ Carbohydrates fats
(d) Fats proteins

36. Carbohydrates are digested in the intestine, where they are broken down into their basic units:
(a) Amino acids
(b)✓ Sugars
(c) Fatty acids (d) Starcres

37. Monosaccharides consist of ______ sugar unit:
(a)✓ Single
(b) Two or three
(c) A pair
(d) None of the above

38. The basic units of complex carbohydrates are:
(a)✓ Monosaccharides
(b) Disaccharides
(c) Oligosaccharides
(d) Polysaccharides

39. Which of the followings are crystalline, water-soluble, sweet compounds and in food preparation, they are referred to as sugars:
(a)✓ Monosaccharides and disaccharides
(b) Only monosaccharides
(c) Only disaccharides
(d) None of the above

40. ______ are the most abundant and familiar of natural sugars:
(a) Monosaccharides
(b)✓ Disaccharides
(c) Oligosaccharides
(d) Polysaccharides

41. The three important monosaccharides in food preparation are:
(a)✓ Glucose, fructose and galactose.
(b) Ribose, fructose and galactose
(c) Glucose, ribose and galactose
(d) Glucose, fructose and ribose

42. The other name of glucose is:
(a)✓ Dextrose (b) D-glucose
(c) Grape sugar
(d) All of the above

43. Levulose is also known as:
(a) Dextose (b) D-glucose
(c) Mannose (d)✓ Fructose

44. Which of the following is a fruit sugar?
(a) Mannose (b) Glucose
(c)✓ Fructose (d) Sucrose

45. The milk sugar is also known as:
(a) Glucose (b) Galcatose
(c) Fructose (d)✓ Lactose

46. Mannose is a:
(a)✓ Monosaccharide
(b) Disaccharide
(c) Trisaccharide
(d) Polysaccharide

47. Two monosaccharides unite to form a disaccharide and in the process, a molecule of ______ is released:
(a) Oxygen
(b) Carbon dioxide
(c) Nitrogen (d) Water

48. Sucrose, maltose and lactose are all:
(a) Monosaccharides
(b)✓ Disaccharides
(c) Trisaccharides
(d) Polysaccharides

49. Starch, amylose and amylopectin, are all:
(a) Monosaccharides
(b) Disaccharides
(c) Trisaccharides
(d)✓ Polysaccharides

50 Cane and beet sugars are:
(a) Monosaccharides
(b)✓ Disaccharides
(c) Trisaccharides
(d) Polysaccharides

51. ______ can be metabolized quickly to meet energy needs of our body:
(a) Fat (b)✓ Sugar
(c) Protein (d) Vitamins

52. The ______ molecule is a disaccharide composed of the monosaccharides glucose and fructose; and has with the molecular formula $C_{12}H_{22}O_{11}$
(a) Lactose (b)✓ Sucrose

(c) Galactose (d) Maltose

53. Milk sugar, lactose, is formed by combination of:
(a) glucose + glucose
(b)✓ galactose + glucose
(c) galactose + galactose
(d) sucrose + glucose

54. Maltose is formed by the combination of:
(a)✓ glucose + glucose
(b) galactose + glucose
(c) galactose + galactose
(d) sucrose + glucose

55. Long chain of many sugar molecules is called:
(a) Oligosaccharides
(b) Starch
(c)✓ Polysaccharides
(d) None of the above

56. Plant gums and mucilages are:
(a) Trisaccharides
(b) Oligosaccharides
(c)✓ Polysaccharides
(d) None of the above

57. Starch granules contain ______ molecules:
(a) Amylose (b) Amylopectin
(c)✓ Both amylose and amylopectin
(d) None of the above

58. ______ are straight chain polysaccharides as shown in figure below:
(a)✓ Amylose molecules
(b) Amylopectin molecules
(c) Both amylose and amylopectin molecules
(d) None of these

59. The general chemical formula of carbohydrate is:
(a)✓ $(CH2O)_n$
(b) $(CH2O)_{2n}$
(c) $(CHO)_n$
(d) $CnH_{2n}O$

60. ______ aids the absorption of calcium:
(a) Maltose (b) Glucose
(c)✓ Lactose (d) Fructose

61. Which of the following sugar is a part of the important compounds like DNA2 and RNA3?
(a) Glucose (b)✓ Ribose
(c) Maltose (d) Lactose

62. Fiber, hemicellulose and pectins, which are components of the skins of fruits, covering of seeds. and the structural parts of edible plants, are usually referred to as:
(a) Fiber (b) Pectin
(c)✓ Cellulose
(d) None of the above

63. Which of the following are major sources of starch?
(a)✓ Cereals, pulses, roots and tubers
(b) Meat, fish and egg
(c) Fruits and vegetables
(d) None of the above

64. Sugar is found mainly in:
(a)✓ Fruits, sugar cane and sugar beet
(b) Cereals and pulses
(c) Milk and milk products
(d) Roots and tubers

65. A small portion of energy from the carbohydrates is stored as ______ mainly in the muscles and liver:
(a) Glucose (b) Fructose
(c)✓ Glycogen (d) Oxygen

66. Which of the following is known as animal starch?
(a) Sucrose (b) Pectin
(c) Levulose (d)✓ Glycogen

67. In the animals, carbohydrates are found in milk of mammals (lactose) and as a storage reserve of ______ to some extent:
(a) Glucose (b)✓ Glycogen
(c) Galactose (d) Glucagon

68. Excess intake of carbohydrates is converted to:
(a) Blood sugar
(b)✓ Fat
(c) Glucose (d) Fructose

69. Which of the following can be hydrolyzed by boiling with dilute acid or by enzymes to produce the sugar from which they are made?
(a) Monosaccharides
(b)✓ Disaccharides
(c) Trisaccharides
(d) Polysaccharides

70. During digestion, starch and other carbohydratt hydrolyzed to:
(a) Fructose (b) Sucrose
(c) Lactose (d)✓ Glucose

71. Which sugar among the following is the sweetest?
(a) Glucose (b)✓ Fructose
(c) Starch (d) Sucrose

72. There is a ______ group in the glucose molecule:
(a)✓ Aldehyde (b) Ketone
(c) Carboxyl (d) Hydroxyl

73. As the aldehyde in glucose gets easily oxidized to its corresponding acid, it acts as a _____ sugar, with even mild oxidizing agents:
(a)✓ Reducing (b) Non reducing
(c) Neutral (d) None of these

74. When sucrose is hydrolysed, fructose and glucose are formed, which is known as the process of inversion. Sucrose sweet than invert sugar:
(a)✓ Less (b) More
(c) Same (d) None of these

75. ______ is obtained by the hydrolysis of lactose, the milk sugar:
(a) Glucose (b) Fructose
(c)✓ Galactose (d) Sucrose

76. Galactose is synthesized from blood glucose by mammals. The galactose thus formed combines with glucose to form:
(a) Glucose (b) Fructose
(c)✓ Lactose (d) Sucrose

77. The amount of lactose in human milk is about ______ per cent:
(a) 4.4% (b)✓ 7.4%
(c) 9.4% (d) 5.4%

78. Cow's milk, which is used to prepare infant milk formulas, has about ______ % lactose:
(a)✓ 3 (b) 5
(c) 7 (d) 9

79. The sugar, we use to sweeten our cup of tea is:
(a) Glucose (b) Fructose
(c) Lactose (d)✓ Sucrose

80. The sugar found in malted grains is:
(a) Glucose (b)✓ Maltose
(c) Sucrose (d) Galactose

81. Maltose contains two combined units of _____ which are released as D-glucose by hydrolysis:
(a) Fructose (b) Lactose
(c)✓ Glucose (d) Amylose

82. Maltose is a ______ sugar, but only one of the aldehyde groups of glucose is free, the other is used up to unite the two glucose units:
(a)✓ Reducing (b) Non-reducing
(c) Oxidizing
(d) Non-oxidizing

83. Which of the following is a non-reducing sugar?
(a)✓ Sucrose (b) Lactose
(c) Levulose (d) Hexose

84. The percentage of reducing sugars present in starch derivatives is called:
(a) Sugar factor
(b)✓ Dextrose equivalent
(c) Tollen's ratio
(d) Hydrolysis potential

85. The chemical reaction of non enzymatic browning (Maillard reaction) may result in which of the following:
(a) Change in colour, taste and aroma
(b) Loss in nutritive value
(c) Formation of toxicologically suspect compounds (acrylamide)
(d)✓ All of the above

86. In the presence of acids, the sugar (sucrose) is partially hydrolysed to form ______ which is known as invert sugar:
(a) Glucose (b) Fructose
(c)✓ Glucose and fructose
(d) Either glucose or fructose

87. ______ when hydrolysed with dilute acids or the enzyme sucrase, yields equal amounts of glucose and fructose:
(a) Lactose (b) Galactose
(c)✓ Sucrose (d) Maltose

88. Which of the following is a good source of invert sugar?
(a) Potato (b)✓ Honey
(c) Apple (d) Banana

89. Chemically, honey is concentrated solution of ______ in which small amounts of sucrose, dextrins, mineral matter, proteins (trace) and organic acids are present:
(a) Glucose (b) Fructose
(c)✓ Fructose and glucose
(d) Lactose and maltose

90. When sugar is heated to a temperature above the melting point, it decomposes and forms a brown mass, which is known as:
(a) Enzymatic browning
(b) Non-enzymatic browning
(c)✓ Caramel (d) Burnt sugar

91. Molasses, separated in the process of sugar manufacture, are used to produce industrial ______
(a)✓ Alcohol (b) Vinegar
(c) Acid (d) Acetaldehyde

92. Commercially, glucose is made from ______ hydrolysis:
(a) Rice (b) Potato
(c)✓ Corn (d) Arrowroot

93. Which of the following sugar is the most soluble of all the sugars and is also the sweetest of all natural sugars?
(a) Sucrose (b) Lactose
(c)✓ Fructose (d) Maltose

94. When starch is hydrolyzed with an acid, ______ formed as an intermediate product:
(a)✓ Maltose (b) Glucose
(c) Lactose (d) Fructose

95. The sugars arranged in descending order of solubility, are:
(a) Sucrose, glucose, maltose, fructose and lactose
(b)✓ Fructose, sucrose, glucose, maltose and lactose
(c) Glucose, fructose, sucrose, maltose and lactose
(d) Lactose, fructo[illegible] glucose and maltose

96. Crystallization of sugar occurs whe saturated solution of sugar is ______ gradually:
(a) Heated (b)✓ Cooled
(c) Alternatively cooled and heated
(d) None of the above

97. ______ is not digested by the human body:
(a)✓ Fiber (b) Fat
(c) Protein
(d) Carbohydrates

98. Lack of ______ in the diet could lead to constipation and other disturbances of the colon:
(a)✓ Fiber (b) Fat
(c) Protein
(d) Carbohydrates

99. ______ are the important carbohydrates found in food:
(a) Starch and sugars
(b) Starch, sugars, celluloses and hemi-celluloses
(c)✓ Starch, sugars, pectins, gums, celluloses and hemi- cell uloses
(d) Starch, sugars and cell uloses

100. ______ are the major constituents of cereals, millets, dais, roots, tubers and sago:
(a) Proteins (b)✓ Starches
(c) Vitamins (d) Minerals

101. Starches ______ water when soaked in hot water:
(a)✓ Absorb (b) Dissolve in
(c) Adsorb (d) None of these

102. The change in texture, colour and physical state, which occurs when starch is heated in water, is known as of starch:
(a) Retrogradation
(b) Absorption
(c)✓ Gelatinisation
(d) Adsorption

103. When a high concentration of sugar is used, it acts as a preservative by ______ moisture as in preserves such as murrabbas, jams and jellies:
(a)✓ Binding (b) Absorbing
(c) Dissolving (d) Dissoluting

104. Which of the following are responsible for holding the plant cells together?
(a)✓ Pectins and gums
(b) Cellulose
(c) Starch (d) None of these

105. Pectins and gums are used as ______ in food preparation and processing:
(a) Thickeners and stabilisers
(b) Gelling agent
(c) Stabilisers
(d)✓ All of the above

106. Amla, guava, citrus fruits, papaya and apples contain pectin as ______ fibre:
(a) Insoluble (b)✓ Soluble
(c) (a) & (b) (d) None of these

107. Celluloses and hemicelluloses, the fibrous parts of vegetables and fruits are ______ in cold or hot water:
(a) Soluble (b)✓ Not soluble
(c) Partially soluble
(d) None of the above

108. Celluloses are not digested by man even after cooking, but it has the capacity to ______ moisture, and hence, it is helpful in smooth movement of the food through the digestive tract:
(a) Repel (b)✓ Bind
(c) Dispel (d) None of these

109. When sugar solutions are boiled to about 150°C with addition of cream of tartar, and subsequently cooled to a glass like solid, ______ are formed:
(a) Chocolates
(b) Hard boiled sugar candies
(c)✓ Toffees
(d) None of the above

110. ______ is made from fat, milk, sugar and glucose syrup:
(a) Chocolates
(b) Hard boiled sugar candies
(c)✓ Toffees
(d) None of the above

111. Commercially available ______ are made using cocoa solids, cocoa butter and sugar:
(a)✓ Chocolates
(b) Hard boiled sugar candies
(c) Toffees
(d) None of the above

112. The characteristic flavor of toffee is due to the ______ of milk solids during cooking:
(a) Inversion
(b)✓ Caramelisation
(c) Crystallization
(d) Conversion

113. High fructose corn syrup (HFCS) is prepared by treating glucose syrup with ______ to convert about half of the glucose to fructose:
(a)✓ Heat (b) Enzyme
(c) Yeast
(d) None of the above

114. ______ contributes to gelling characteristics to cooked and cooled starch mixtures:
(a)✓ Amylose (b) Amylopectin
(c) (a) & (b) (d) None of these

115. ______ provides cohesive or thickening property, but does not usually contribute to gel formation:
(a) Amylose (b)✓ Amylopectin
(c) (a) & (b) (d) None of these

116. Rice grain after cooking becomes sticky if ______ is less in the grain:
(a)✓ Amylose (b) Amylopectin
(c) (a) & (b) (d) None of these

117. The amylose content of the rice grain varies between ______
(a) 0-5% (b) 40-80%
(c)✓ 0-30% (d) None of these

118. Waxy maize starch contains more of:
(a) Amylose (b)✓ Amylopectin
(c) (a) & (b) (d) None of these

119. Some of the starch molecules are broken down to dextrins when exposed to dry heat. This process in known as:
(a)✓ Dextrinization
(b) Inversion
(c) Caramelization
(d) Crystallization

120. Dextrinization is a process of:
(a)✓ Dry heating
(b) Heating with steam
(c) Drying (d) Hydrolyzing

121. When starch is heated with water, the granules swell and the dispersion increases in viscosity until a peak thickness is reached. The dispersion also increases its translucency. These changes are described as:
(a) Dextrinization
(b) Caramelization
(c) Crystallization
(d)✓ Gelatinisation

122. Where the cereal grains are first roasted with or without fat and then cooked in water, the cereal grains remain separate and do not stick together. It is because of partial:
(a) Dextrinization
(b) Caramelization
(c) Crystallization
(d)✓ Gelatinisation

123. As a starch-thickened mixture cools after gelatinization is complete, there are formations of bonds between the molecules of starch in the mixture. This bonding produces a three-dimensional network that increases the rigidity of the starch mixture and results in formation of a:
(a) Crystal (b)✓ Gel
(c) Shell (d) None of these

124. Corn starch gels are more rigid than gels formed from tapioca or potato because the latter contains less:
(a)✓ Amylose (b) Amylopectin
(c) (a) & (b) (d) None of these

125. The bond which forms between the straight chains of amylose molecules are ______ and are more readily formed than the bond which forms between the branched chains of amylopectin molecules:
(a) Weaker (b)✓ Stronger
(c) Looser
(d) Equal in strength

126. As starch gels are allowed to stand for some time or age after the gel formation is complete, additional bonds are formed between the straight chain amylose molecules. Some of these molecules get associated and aggregate in a particular area in an organized crystalline manner. As these molecules tend to pull together, the gel network shrinks, pushing out the entrapped water from the gel. This process of weeping from a gel is called:
(a) Oozing out (b)✓ Syneresis
(c) Inversion
(d) Retrogradation

PROTEINS

127. Pulses, nuts, oilseeds, milk and milk products, eggs, fish, poultry and meat are the good sources of ______ in the diet:
(a) Oils and fat

(b) Carbohydrates
(c) Water (d)✓ Protein

128. Which of the following does not contain protein?
(a) Cereals (b) Soyabean
(c) Mustard (d)✓ None of these

129. Protein is found in ______ cell of our body:
(a) Selected (b)✓ Every
(c) Most (d) None of these

130. Which of the following means "to take the first place"?
(a) Carbohydrate
(b)✓ Protein
(c) Fats (d) Minerals

131. All the proteins contain the elements:
(a) Carbon, hydrogen and oxygen
(b)✓ Carbon, hydrogen, oxygen and nitrogen
(c) Carbon, hydrogen and nitrogen
(d) Hydrogen, oxygen and nitrogen

132. Proteins contain about ______ per cent nitrogen:
(a) 14 (b)✓ 16
(c) 18 (d) 12

133. Proteins are ______ molecules than carbohydrates and fats:
(a) Smaller (b)× Larger
(c) Either smaller or larger
(d) None of these

134. The presence of ______ distinguishes proteins from carbohydrates and fats:
(a)✓ Nitrogen (b) Oxygen
(c) Hydrogen (d) Carbon

135. Proteins are built from simple compounds called:
(a) Ions (b) Sugars
(c)✓ Amino acids
(d) Fatty acids

136. The amino acids contain ______ in their molecules:
(a) Only a basic (amino – NH_2) group
(b) Only an acidic (carboxyl – COOH) group
(c)✓ Both basic (amino – NH_2) and an acidic (carboxyl – COOH) groups
(d) None of these

137. The structure of a protein molecule is dependent on the number and kind of present in it:
(a)✓ Amino acids
(b) Nitrogen
(c) Carboxyl group
(d) None of the above

138. The amino acids, which can be synthesized in the body, are termed as:
(a)✓ Non essential amino acids
(b) Essential amino acids
(c) (a) and (b) (d) None of these

139. Those amino acids, which cannot be synthesize in the body, but are essential for maintenance in human beings and which have to be supplied in the food are called:
(a) Non essential amino acids
(b)✓ Essential amino acids
(c) (a) and (b) (d) None of these

140. Which of the following is not an essential amino acid required for adults?
(a) Isoleucine (b) Leucine
(c)✓ Argenine (d) Methionine

141. Which amino acid is specifically required for the growth of children?
(a) Argenine
(b)✓ Histidine
(c) Valine
(d) None of these

142. Animal foods such as milk, egg, fish, poultry, etc. contain ______ essential amino acids:
(a)✓ All (b) Few
(c) No (d) Most

143. Cereal protein is incomplete in that it lacks in an essential amino acid, ______.

(a)✓ Lysine (b) Methionine
(c) Histidine (d) Cystine

144. Pulses are low in:
(a) Histidine (b)✓ Methionine
(c) Leucine (d) Lysine

145. Biological value indicates the relative nutritional value of a:
(a)✓ Protein (b) Glucose
(c) Amino acid (d) Fat

146. Biological value of protein mixture in the meal is ______ that of the individual food proteins, when eaten separately:
(a) Lower than (b)✓ Higher than
(c) Equal to (d) None of these

147. The ability of proteins to act as ______ is referred to as its amphoteric nature:
(a) An acid
(b)✓ Both an acid and a base
(c) A base
(d) None of the above

148. The amphoteric nature of proteins is very important from biological point of view, as it prevents sudden change of ______ in the body:
(a) DNA (b) Acidity
(c) Sugar content
(d)✓ pH

149. There is structural change of protein if it is exposed to:
(a) Heat (b) Light
(c) Change in pH
(d)✓ All of the above

150. Denaturation of proteins essentially involves change in ______ of proteins:
(a) Texture (b)✓ Structure
(c) Plasticity (d) Elasticity

151. ______ means curdling, formation of a mass, congealing or solidifying of protein:
(a) Denaturation
(b) Solidification
(c) Liquification
(d)✓ Coagulation

152. Proteins coagulate on exposure to:
(a) Heat (b)✓ Change in pH
(c) Heat and/or change of pH
(d) None of these

153. All proteins are:
(a) First coagulated and then denatured by heat
(b)✓ First denatured and then coagulated by heat
(c) Denatured and coagulated simultaneously
(d) None of these

154. When an egg is boiled or scrambled, the egg proteins______ and a solid mass is formed from raw egg:
(a) Denature (b)✓ Coagulate
(c) Solidify (d) Quefy

155. When milk is incubated with curd, the liquid milk is transformed to curd, due to ______ of milk protein by the lactic acid formed:
(a) Denaturation
(b) Solidification
(c) Liquefaction
(d)✓ Coagulation

156. Cooking results in softening of proteins in foods such as eggs, fish, poultry, meat, as water is bound in the process of:
(a)✓ Coagulation
(b) Denatuntion
(c) Both coagulation and denaturation
(d) Hydration

157. In the preparation of curd, the proteins bind water and hold it. This property of proteins is known as:
(a)✓ Hydration (b) Solidification
(c) Denaturation
(d) Coagulation

158. When proteins are coagulated by the action of acid on hot milk, which of the following protein present in milk coagulates and whey is formed:
(a) Rennin (b)✓ Casein
(c) Albumin (d) Thiamine

159. When proteins are coagulated by the action of acid on hot milk, the coagulum formed is known as:
(a) Whey
(b)✓ Cottage cheese
(c) Cheddar cheese
(d) Curd

160. Gelatin, a protein, when placed in cold water, swells due to:
(a) Absorption (b)✓ Hydration
(c) Imbibation (d) None of these

161. Emulsifying agents are substances whose molecules contain _____ groups:
(a) Hydrophilic (water-loving) groups
(b) Hydrophobic (water-hating) groups
(c)✓ Both hydrophilic (water-loving) and hydrophobic (water-hating) groups
(d) None of the above

162. Proteins act as ______ because of their water loving and water hating nature:
(a) An acidulant
(b) An antioxidant
(c)✓ Emulsifying agents
(d) None of the above

163. Formation of foam is necessary in some food preparations. Proteins, when beaten are able to hold in air, and thus improve the texture and feel of the food. Thus, protein can be a good:
(a) Emulsifying agents
(b)✓ Foaming agent
(c) Hydrating agent
(d) None of the above

164. Plants synthesize protein by combining from soil with carbon dioxide from the air:
(a) Nitrogen
(b)✓ Nitrogen and water
(c) Nitrogen and sulfur
(d) Nitrogen water and sulfur

165. Severe deficiency of ______ in early stage may result in development of kwashiorkor in, small children:
(a) Oils and fat
(b) Carbohydrates
(c) Water (d)✓ Protein

FATS AND OILS

166. Which of the following are also known as lipids?
(a) Carbohydrates
(b) Proteins
(c)✓ Oils and fats
(d) Vitamins

167. Oils and fats are composed of:
(a) Glycerol
(b) Either glycerol or fatty acids
(c) Fatty acids
(d)✓ Glycerol and fatty acids

168. Which of the following is not a lipid?
(a) Oils, fats (b) Phospholipid
(c) Waxes (d)✓ None of the

169. Fats and oils contain:
(a) Hydrogen and oxygen
(b) Carbon and hydrogen
(c)✓ Carbon, hydrogen and oxygen
(d) Carbon and oxygen

170. The amount of oxygen present in fats and oils is ______ than that in carbohydrates:
(a) Higher (b)✓ Lower
(c) Equal (d) None of these

171. Each gram of oil or fat supplies:
(a) 4 kilocalories of energy
(b) 6 kilocalories of energy
(c)✓ 9 kilocalories of energy
(d) 12 kilocalories of energy

172. Which of the following act as cushion and protect vital organs of the body?
(a) Water
(b) Carbohydrates
(c)✓ Fats (d) Protein

173. Liquid fats, better known as oils, are liquid at room temperature. They contain a high proportion of ______ fatty acids:

(a) Saturated (b)✓ Unsaturated
(c) Liquid (d) Consolidated

174. Linoleic acid has to be supplied in the diet and is termed ______ fatty acids:
(a)✓ Essential (b) Non-essential
(c) Synthetic (d) Non-synthetic

175. Glycerol, an important constituent of fats and oils, is a:
(a) Trihydric acid
(b)✓ Trihydric alcohol
(c) Trihydric ester
(d) Trihydric aldehy

176. Which of the following statement is wrong?
(a) Unsaturated fatty acids may contain one or more double bonds.
(b) Unsaturated fatty acids have lower melting points than saturated ones containing the same number of carbon atoms.
(c) As the proportion of unsaturated fatty acids increases,. the softness of fat increases.
(d)✓ None of the above

177. Majority of the unsaturated fatty acids obtained from oils and fats contain ______ carbon atoms:
(a) 17 (b)✓ 18
(c) 19 (d) 20

178. Which of the following is a saturated fatty acid?
(a)✓ Stearic acid
(b) Linoleic acid
(c) Linolenic acid
(d) All of the above

179. Stearic acid, a saturated fatty acid, contains ______ carbon atoms:
(a) 14 (b) 16
(c) 12 (d)✓ 18

180. $CH (CH_2)_7CH{=}CH (CH_2)_7COOH$ is:
(a)✓ Oleic acid
(b) Linolenic acid
(c) Stearic acid
(d) Linoleic acid

181. Oleic acid has ______ double bonds:
(a)✓ One (b) Two
(c) Three
(d) More than one

182. Linoleic acid contains ______ doubl bonds:
(a) Zero (b) One
(c)✓ Two (d) Three

183. Linolenic acid contains ______ double bonds:
(a) Zero (b) One
(c) Two (d)✓ Three

184. Linolenic acid contains three doubl bonds in positions:
(a)✓ 3, 6 and 9 (b) 2,4 and 6
(c) 6,9 and 12 (d) 9, 12 and 15

185. Which of the following is a goo source of polyunsaturated fatty acid (PUFA)?
(a)✓ Sunflower (b) Palmolein
(c) Coconut oil (d) Butter

186. Steroids, which are ______ are ar exception in that these are no derivatives of fatty acids:
(a) Carbohydrates
(b) Proteins
(c)✓ Lipids (d) Vitamins

187. Vitamin ______ and bile acids are important steroids, which are relate to cholesterol:
(a) A (b) B
(c) C (d)✓ D

188. Which among the following group i general has the least fat?
(a) Milk (b) Pulses
(c)✓ Vegetable and fruits
(d) Cereals

189. ______ are added in food preparatio as spreads, shortening, as flavour enhancers and as seasonings:
(a) Proteins
(b) Carbohydrates
(c)✓ Oils and fats
(d) Vitamins

190. Ghee contains ______ % fat:
(a) 87 (b) 81
(c) 54 (d)✓ 99

191. Butter contains ______ % fat:
(a) 67 (b)✓ 81
(c) 54 (d) 99

192. The food is cooked quicker in fat because:
(a)✓ The oils and fats have a higher boiling point water.
(b) The oils and fats have lower viscosity than water
(c) The oils and fats are not absorbed by the food.
(d) The oils and fats have lower surface tension than water.

193. When foods containing fat are heated, the fat has a tendency to _____ the food:
(a) Dissolve in
(b)✓ Separate from
(c) Be absorbed in
(d) None of these

194. The presence of fat between protein and starch layers makes the product crunchy (e.g., baked goods) and its presence in meats ten de rises it. This is known as ______ power of fat:
(a)✓ Shortening (b) Dissolving
(c) Homogenizing
(d) Absorbing

195. Fats and oils become ______ by the action of air (oxidation), water (hydrolysis) and enzymes:
(a) Placid (b)✓ Rancid
(c) Viscous (d) White

196. Fat and oils have a ______ boiling point as compared to water:
(a)✓ High (b) Low
(c) Same (d) Medium

197. Refined oils have a ______ shelf-life than unrefined oils of the same raw material:
(a) Smaller (b)✓ Longer
(c) Same (d) None of these

198. The ______ point is the temperature at which a fat or oil gives off a thin bluish smoke:
(a) Fire (b)✓ Smoke
(c) Boiling (d) Melting

199. Normally, oils that are selected for deep fat frying are those, which have a ______ smoke point:
(a) Low (b)✓ High
(c) Moderate (d) Very low

200. Repeated use of the same sample of oil for frying results in a ______ in its smoke point and ultimately in its decomposition:
(a)✓ Increase (b) Decrease
(c) Remain same
(d) None of the above

201. Fats and oils with low molecular weight fatty acids (those with a short chain length) have ______ smoke point:
(a)✓ Low (b) High
(c) Medium (d) Very high

202. The refining process of oil removes the impurities. Thus the smoke-point of refined oils will be than that of unrefined oils:
(a) Lower (b)✓ Higher
(c) Same
(d) None of the above

203. Fats can be stored in the cell without disturbing their:
(a) Hygroxyl bond
(b) Aleurone layer
(c)✓ Osmotic relations
(d) None of these

204. Hydrogenated fats have a smoke point than refined oils, and are used for frying bland foods:
(a) Lower (b)✓ Higher
(c) Same

205. Hydrogenated fats are used in pastries as a agent:
(a)✓ Shortening (b) Emulsifying
(c) Tenderizing (d) Aerating

206. All food fats do not have a sharp melting point, but melt over a range of temperatures, because:
(a) Some of them may be unsaturated

(b) Different locations of double bonds affect the melting point
(c)✓ They are a mixtures of triglycerides
(d) None of the above

207. Solid fats like butter and margarine can be creamed or (made soft and fluffy by the incorporation of air. Fat and sugar are usually creamed together in the preparation of cakes. This is known as ______ of fats:
(a) Leavening (b) Aerating
(c)✓ Creaming (d) Plasticity

208. The spreading quality of butter is the result of its ______ nature:
(a) Elasticity (b) Aerating
(c) Creaming (d)✓ Plasticity

209. The specific gravity of oils and fats is about:
(a) 0.5 (b)✓ 0.9
(c) 1.0 (d) 1.2

210. Oil is insoluble in water; they can form an emulsion with water when beaten up with it to form tiny globules in the presence of suitable ______ agent:
(a) Shortening (b)✓ Emulsifying
(c) Tenderizing (d) Aerating

211. ______ measures the degree of unsaturation in the oil and thus gives an estimate of the total amount of unsaturated fatty acids present:
(a) Peroxide value
(b) Reichert-Meissel number
(c)✓ Iodine Number
(d) Saponification Number

212. Iodine value is expressed as the number of grams of iodine required to saturate 100 grams of oil. One molecule of iodine is needed to saturate each ______ bond:
(a) Single (b)✓ Double
(c) Triple None of these

213. Which of the following is a measure of the volatile water soluble fatty acids present in the fat?
(a) Peroxide value
(b)✓ Reichert-Meissel number
(c) Iodine Number
(d) Saponification Number

214. The ______ is defined as the number of mili litre of O.IN alkali (e.g., KOH) needed to neutralize the volatile fatty acids in a 5 g sample of fat:
(a) Peroxide value
(b)✓ Reichert-Meissel number
(c) Iodine number
(d) Saponification number

215. ______ is defined as the number of mg of potasium hydroxide (KOH) needed to saponify 1 g of fat or oil:
(a) Peroxide value
(b) Reichert-Meissel number
(c) Iodine number
(d)✓ Saponification number

216. The fat containing lower molecular weight fatty acid will have a ______ saponification number:
(a)✓ High (b) Low
(c) Medium

217. ______ contains high percentage of butyric acid and has the highest saponification number, i.e., 17.
(a) Egg (b)✓ Butter
(c) Ghee (d) Fish oil

218. The ______ present in crude oil is neutralized with caustic soda solution and the insoluble soaps that settle at the bottom are removed:
(a) Glycerols (b) Antioxidants
(c)✓ Free fatty acids
(d) Triglycerides

219. The process of removal of undesirable colour pigments from oil during refining is known as ______
(a)✓ Bleaching (b) Dyeing
(c) Whitening
(d) None of the above

220. Which of the following is used for decolorisation of oil?
(a)✓ Activated carbon
(b) Chalk powder

(c) Glucose (d) Bleaching

221. Some impurities in the crude oil form ______ in the presence of water. Such impurities are removed by adding water to the warm oil and centrifuging:
(a) Wax (b)✓ Gums
(c) Fatty acids (d) Lecithin

222. The refined oil has to be stored under an inert gas such as nitrogen or vacuum packed, mainly to prevent:
(a) Reduction (b) Acidification
(c) Ionization (d)✓ Oxidation

223. The oxidation of fat present in food may result in:
(a) Loss of essential fatty acids
(b) Rancidity and off flavour
(c) Formation of toxicologically suspect compounds
(d)✓ All of the above

224. The undesirable odor or flavor developed in oil is due to:
(a) Acidification
(b) Adulteration
(c)✓ Rancidity
(d) None of the above

225. The fats undergo a peculiar change before the onset of rancidity. The characteristic flavor is lost and the fat or oil has a flat taste and a greasy feel on the tongue. This is known as flavor:
(a) Conversion (b) Inversion
(c)✓ Reversion
(d) Transformation

226. Fats and oils can get rancid by the action of:
(a) Air (oxidation)
(b) Water (hydrolysis)
(c) Enzyme (enzymatic breakdown)
(d)✓ All of the above

227. Oils containing combined fatty acids with more than carbon atoms do not develop hydrolytic rancidity as the free acids are flavorless and odorless:
(a) 8 (b)✓ 14
(c) 18 (d) 20

228. Oxidation of unsaturated fats leads to oxidative rancidity. This oxidation is a chain reaction initiated by the production of free radicals. Additions of small quantities of ______ suppresses the production of free radicals and improves the shelf-life of fats and oils:
(a) Antioxidants
(b)✓ Reducing agent
(c) Oxidants
(d) Preservatives

229. ______ oils contain a large percentage of unsaturated fatty acids, and hence, have a tendency to become rancid:
(a)✓ Plant (b) Animal
(c) Mineral (d) All the above

330. The unsaturated glycerides in the oil can be converted to more saturated glycerides by addition of hydrogen. This process is known as:
(a) Oxygenation
(b) Oxidation
(c)✓ Hydrogenation
(d) Solidification

331. The product formed from hydrogenation is a solid fat with ______ melting point than that of the oil used as starting material:
(a)✓ Higher (b) Lower
(c) Same (d) Slightly lower

ACIDS

332. Which of the following statement is wrong?
(a)✓ Most of the acids found in foods are strong acids.
(b) Acids change the colour of some natural dyes from blue to red.
(c) Inorganic acids are completely ionized in solution and are called strong acids
(d) Acetic acid, a component of vinegar, is a typical weak acid

233. A pH change of one is a ______ change in hydrogen ion concentration:
(a)✓ Ten-fold (b) One fold
(c) Hundred fold
(d) Seven fold

234. Carboxylic acids contain a carboxyl group, which has the formula of:
(a) – COOH (b) – CH_2OH.
(c) = COOH (d) = CH_2OH

235. Which one of the following is acetic acid?
(a) C_3H_7 COOH
(b) C_2H_5 COOH
(c)✓ CH_3 COOH
(d) $C_{17}H_{35}$ COOH

236. Butyric acid is found in ______, combined with glycerol:
(a) Coconut oil
(b) Condensed milk
(c) Palm oil (d)✓ Butter

237. Oxalic acid is a di-carboxylic acid, which contains ______ carboxylic groups:
(a) One (b)✓ Two
(c) Three (d) Four

238. Hydroxy acids are those acids, which contain:
(a)✓ Both a hydroxyl (OH) and a carboxyl (COOH) group
(b) Both a hydroxyl (OH) and a aldehyde (COH) group
(c) Only aldehyde group
(d) Only hydroxyl group

239. Hydroxy acids behave:
(a) As an acid and aldehyde
(b)✓ As an alcohol and as an acid
(c) As aldehyde
(d) As acid

240. The most common hydroxy acid which is present, when milk sugar is hydrolyzed is:
(a) Acetic acid (b)✓ Lactic acid
(c) Butyric acid
(d) Lauric acid

241. ______ are two acids commonly present in fruits:
(a) Citric acid and acetic acid
(b) Malic acid and acetic acid
(c)✓ Malic acid and citric acid
(d) Lactic acid and acetic acid

242. Malic and citric acid are responsible for the flavor of fresh fruits and are present in fruits as their ______ salts and also as free acids:
(a) Sodium (b)✓ Potassium
(c) Calcium (d) Magenisium

243. ______ acid is found in citrus fruits, pineapples, tomatoes and most other summer fruits:
(a)✓ Citric acid (b) Lactic acid
(c) Malic acid (d) Acetic acid

244. ______ is found in grapes. unripe apples, plums and rhubarb:
(a) Citric acid (b) Lactic acid
(c)✓ Malic acid (d) Acetic acid

245. ______ is present in grapes and tamarind:
(a) Citric acid (b) Lactic acid
(c) Malic acid (d)✓ Tartaric acid

246. ______ salts are used in baking powder:
(a) Citric acid (b) Lactic acid
(c) Malic acid (d)✓ Tartaric acid

MINERALS

247. ______ refers to elements other than carbon, hydrogen, oxygen and nitrogen, which are present in foods:
(a) Vitamins (b) Proteins
(c) Enzymes (d)✓ Minerals

248. Human beings require ______ different elements for health and growth:
(a)✓ 14 (b) 15
(c) 16 (d) 20

249. Which of the following mineral is not required by human being?
(a) Sulphur (b) Chlorine
(c)✓ Aluminum (d) Manganese

250. Which of the following mineral is required in appreciable amount by the body?
(a)✓ Calcium (b) Cobalt

(c) Iodine (d) None of these

251. Which of the following mineral is required in trace amount by the human body?
(a) Calcium (b) Potassium
(c)✓ Iron (d) None of these

252. The minerals that are needed in comparatively large amounts to help normal growth and development of bones and teeth are:
(a)✓ Calcium and phosphorus
(b) Iron, magnesium
(c) Sodium, chlorine
(d) Copper, zinc

253. Severe deficiency of ______ may cause rickets in children and osteomalacia in adults:
(a) Sodium (b)✓ Calcium
(c) Iron (d) Chlorine

254. ______ is essential for the formation of haemoglobin, the red pigment in blood:
(a) Sodium (b) Calcium
(c)✓ Iron (d) Chlorine

255. The lack of iron results in ______ due to insufficiency of haemoglobin, the iron containing pigment in blood:
(a) Anaemia (b) Ticket
(c)✓ Osteomalacia
(d) None of these

256. Persons lacking get tired easily or feel faint due to inability of the body to carry sufficient oxygen to the cells for respiration:
(a) Sodium (b) Calcium
(c)✓ Iron (d) Chlorine

VITAMINS

257. Vitamins must be provided to the body, to ensure:
(a)✓ Normal growth and maintenance of the body
(b) Supply of energy to the body
(c) Prevention of malnutrition
(d) None of these

258. Vitamins are important for their:
(a) Regulatory functions
(b) Protective functions
(c)✓ Regulatory and protective functions
(d) None of these

259. Which of the following are fat soluble vitamins?
(a) B,C and D (b) A,B and C
(c) A,C and K (d)✓ A,D,E and K

260. The two vitamins, which are most affected by cooking are:
(a)✓ Thiamine and vitamin C
(b) Vitamin C and Vitamin B
(c) Niacin and Vitamin C
(d) Vitamin C and Vitamin D

261. ______ is the most labile vitamin:
(a) Vitamin A (b) Vitamin B
(c)✓ Vitamin C (d) Vitamin D

262. Which of the following is water soluble, is easily oxidised and is also affected by heat?
(a) Vitamin A (b) Vitamin B
(c)✓ Vitamin C (d) Vitamin D

263. Normal cooking procedures usually do not spoil much of:
(a)✓ Fat-soluble vitamins
(b) Water-soluble vitamins
(c) Both water & fat-soluble vitamins
(d) None of the above

264. Vitamin C is also known as:
(a) Citric acid (b)✓ Ascorbic acid
(c) Lactic acid (d) Malic acid

265. Thiamin, riboflavin and niacin belong to the:
(a) Vitamin A-complex group
(b)✓ Vitamin B-complex group
(c) Vitamin C-complex group
(d) Vitamin D-complex group

266. Retinol is:
(a)✓ Vitamin A (c) Vitamin C
(b) Vitamin B (d) Vitamin D

267. ______ is needed for normal vision in light and darkness (night):
(a)✓ Vitamin A (b) Vitamin B
(c) Vitamin C (d) Vitamin D

268. ______ deficiency, which develops progressively as dryness of conjunctiva, xerosis of cornea and

corneal infection, which if unchecked may lead to blindness:
(a)✓ Vitamin A (b) Vitamin B
(c) Vitamin K (d) Vitamin D

269. Vitamin A is present only in:
(a)✓ Fat of animal foods
(b) Green leaves
(c) Bones (d) None of these

270. A plant pigment (red-orange in colour) called is converted to vitamin A in the body:
(a)✓ Carotene (b) Xanthophylls
(c) Anthocyanin
(d) Chlorophyll

271. Which of the following is essential for the absorption of calcium and phosphorus from the digestive tract and deposition in the bones?
(a) Vitamin A (b) Vitamin B
(c) Vitamin C (d)✓ Vitamin D

272. ______ is formed from a substance present in our skin, called 7–dehydrocholesterol:
(a) Vitamin A (b) Vitamin B
(c) Vitamin C (d)✓ Vitamin D

273. Since milk, human as well as cows, is not a good source of ______ a small supplement is required for both breast-fed and bottle-fed infants:
(a) Vitamin A (b) Vitamin B
(c)✓ Vitamin C (d) Vitamin D

274. Fish liver oil preparations are normally used as supplements for the supply of:
(a) Vitamin A (b) Vitamin D
(c)✓ Vitamin A and D
(d) Vitamin Band C

275. Deficiency of ______ in man has not been reported and so there is no recommended daily intake:
(a) Vitamin A (b) Vitamin D
(c) Vitamin B (d)✓ Vitamin E

276. ______ plays an important role in the body as an antioxidant by protecting substances such as unsaturated fatty acids, carotene and ascorbic acid, which are easily oxidized:
(a) Vitamin A (b) Vitamin D
(c) Vitamin B (d)✓ Vitamin E

277. ______ is essential to ensure normal clotting of blood:
(a) Vitamin A (b) Vitamin D
(c)✓ Vitamin K (d) Vitamin E

278. ______ are the principal dietary source of Vitamin K:
(a) Red and lean meat
(b) Cereals and pulses
(c)✓ Green leafy vegetables
(d) Oilseeds

279. ______ is necessary for catalyzing the oxidation of carbohydrates in the body, and this reaction releases energy in the body:
(a) Riboflavin (b) Niacin
(c)✓ Thiamine (d) Biotin

280. Which of the following foods do not contain thiamine?
(a) Pulses and nuts
(b)✓ Sugars, fats and oils
(c) Meat, fish and eggs
(d) None of these

281. ______ of rice helps to conserve thiamine:
(a)✓ Parboiling (b) Drying
(c) Stabilisation
(d) None of these

282. ______ is a water soluble yellow pigment:
(a) Thiamine (b)✓ Riboflavin
(c) Niacin (d) Biotin

283. ______ is more stable to heat:
(a) Thiamine (b)✓ Riboflavin
(c) Vitamin C (d) Vitamin A

284. When in solution, the vitamin ______ is destroyed on exposure to sunlight:
(a) Thiamine (b)✓ Riboflavin
(c) Vitamin D (d) Vitamin A

285. Milk and milk products are generally rich sources of riboflavin. But there is no riboflavin in:
(a) Curd and cheese
(b) Toned and doubled toned milk
(c)✓ Butter and ghee
(d) Pasteurized and homogenized milk

286. Liver and kidney of animals and birds are good sources of:
(a) Thiamine (b)✓ Riboflavin

(c) Vitamin D (d) Vitamin A

287. ______ is most stable of the B complex vitamins:
(a) Riboflavin (b)✓ Niacin
(c) Thiamine (d) Biotin

288. ______ functions as a component of enzymes that are involved in the break-down of glucose to release energy:
(a) Riboflavin (b)✓ Niacin
(c) Thiamine (d) Biotin

289. Which of the following is a rich source of niacin?
(a) Fruit (b)✓ Meat
(c) Vegetable (d) None of these

290. The lack of ______ has long been known to cause a disease, called scurvy in humans:
(a) Vitamin A (b) Vitamin B
(c)✓ Vitamin C (d) Vitamin D

291. ______ helps in the absorption of calcium and iron:
(a) Vitamin A (b) Vitamin B
(c)✓ Vitamin C (d) Vitamin D

292. Losses of ______ can occur due to oxidation and destruction on heating:
(a) Vitamin A (b) Vitamin B
(c)✓ Vitamin C (d) Vitamin D

293. Vitamin C is comparatively more stable in ______ medium:
(a)✓ Acid (b) Alkali
(c) Neutral (d) (a) & (b)

WATER

294. Which of the following is a carrier of nutrients and regulator of a number of body functions?
(a) Vitamin (b) Mineral
(c)✓ Water (d) Protein

295. Water accounts for about ______ % of total adult human body weight:
(a) 15 to 28 (b) 25 to 38
(c)✓ 55 to 68 (d) 85 to 98

296. The percentage of water in the human body tends to ______ as we grow older:
(a) Increase (b)✓ Decrease
(c) Remain same
(d) None of these

297. Blood which contains 90 per cent water carries:
(a) Carbon dioxide to the lungs
(b)✓ Nutrients to the cell
(c) Carbon dioxide to the lungs and nutrients to the cells
(d) Carbon dioxide to the lungs, nutrients to the cells

298. ______, which contains 97 per cent water, has all the waste material dissolved in it and the body is thus able to excrete soluble waste products of metabolism:
(a) Blood (b)✓ Urine
(c) Serum (d) None of these

299. Proteins, polysaccharides and fats in the living cells contain water in the form of:
(a) Free water (b)✓ Bound water
(c) Adsorbed water
(d) None of the above

300. Foods which have a lower moisture content take a ______ time to cook than foods with higher moisture content:
(a) Smaller (b) Equal
(c)✓ Longer (d) None of these

301. Water has the highest specific heat of all materials used as cooking medium. This helps it to retain a conduct heat to and away from the food:
(a) Inefficiently
(b)✓ Very efficiently
(c) Moderately (d) Slowly

302. Foods like cereals and pulses when cooked in water, gain weight to the extent of ______ times:
(a) 0-1 (b)✓ 2-3
(c) 3-4 (d) 5-6

303. General moisture content of stored food grains such as rice, wheat, jowar is about ______ per cent:
(a) 8-10 (b)✓ 12-13
(c) 15-18 (d) 20-22

304. Butter has about ______ per cent water in it:
(a) 10 (b)✓ 18
(c) 25 (d) 30

305. The moisture content of ghee, oil, vanaspati is about ______ per cent:
(a)✓ 0 (b) 5
(c) 10 (d) 15

306. Usual moisture content of vegetables, leafy cabbage, spinach is about ______ per cent:
(a) 75 (b) 80
(c) 85 (d)✓ 92

307. Eggs contain about ______ per cent water:
(a) 64 (b)✓ 74
(c) 84 (d) 94

308. General moisture content of poultry (fowl) and red meat (mutton) is about ______ per cent:
(a)✓ 72 (b) 78
(c) 82 (d) 88

309. When batters and doughs are exposed to heat, the water present is converted to steam. The steam expands and is responsible for the puffing of chapaties and puries; rising of cakes and idlis. Thus, water acts as a ______ agent in food preparations:
(a) Emulsifying
(b) Hydrating
(c) Oxidizing (d)✓ Leavening

310. An adult needs about ______ litres of water per day, in addition to the moisture contained in foods eaten:
(a)✓ 1.0-1.5 (b) 5.0-10.0
(c) 10.0-15.0 (d) 20.0-25.0

311. Foods, which are cooked in hard water a time to cook and may not become soft:
(a)✓ Longer (b) Smaller
(c) Equal (d) None of these

312. Beverages prepared from ______ water are turbid:
(a) Soft (b) Normal
(c)✓ Hard (d) Mineral

313. ______ water is used in canning tomatoes as it increases firmness of tomatoes and helps them retain their shape:
(a) Soft (b)✓ Hard
(c) Mineral (d) Normal

PIGMENTS

314. Which of the following pigment is present in yellow?
(a)✓ Carotenoids
(b) Anthocyanins
(c) Flavonoids
(d) None of these

315. The green color of leafy vegetables is due to:
(a) Anthocyanins
(b) Xanthophylls
(c)✓ Chlorophyll
(d) carotenoids

316. Anthocyanins are ______ color pigments:
(a) Creamy white
(b) Red-blue pigments
(c)✓ Colorless, but turn brown
(d) None of the above

317. Leaves contain two pigments in association chlorophyll (green) and:
(a) Anthocyanins (purple)
(b) Xanthophylls (off-white)
(c) Lycopenes (red)
(d)✓ Carotenes (yellow)

318. Red beetroot contains ______ pigments:
(a) Carotenoids
(b)✓ Anthocyanins
(c) Flavonoids
(d) None of these

319. White potatoes contain ______ pigments:
(a) Carotenoids
(b) Anthocyanins
(c)✓ Flavonoids
(d) None of these

320. When milk is heated slowly its color becomes brown due to the reaction of:
(a)✓ Sugar (sucrose) with amino acids
(b) Fats with proteins
(c) Sugar (lactose) with amino acids
(d) Proteins with minerals

321. Tomatoes contain ______ pigment which is red and is fat soluble:
(a) Carotene

(b) Chlorophyll
(c)✓ Lycopene
(d) Xanthophyll

322. Beetroot contains red color pigment anthocyanin which is soluble in:
(a)✓ Water (b) Fat
(c) Both water and fat
(d) None of the above

323. The yellow-orange colored pigments that are present in many vegetables and fruits such as carrots, pumpkin, mango, orange is:
(a) Anthocyanins (purple)
(b) Xanthophylls (off-white)
(c) Lycopenes (red)
(d)✓ Carotenes (yellow)

324. Leafy vegetables contain green colour pigment chlorophyll, which is soluble in:
(a) Water (b)✓ Fat
(c) Both water and fat
(d) None of the above

325. The metals, ______ and ______ act as catalysts in oxidation. Therefore, these metals are not suitable for use in food preparation or processing equipment:
(a) Aluminum and iron
(b)✓ Copper and
(c) Iron and tin (d) Copper and

326. The coloring substances used in food preparations as annato, betain, caramel, carotene and chlorophyll are all _____ substances:
(a)✓ Natural (b) Synthetic
(c) Inorganic (d) None of the

327. Flavonoids are widely distributed in the plant kingdom. These are ______ soluble pigment:
(a)✓ Water (b) Fat
(c) Both water and fat
(d) None of the

328. Anthoxanthins and flavones are _____ pigments present in many plant foods:
(a)✓ Creamy white
(b) Red-blue pigments
(c) Colourless, but turn brown
(d) None of the above

ENZYMES

329. ______ are organic catalysts produced by living cells:
(a) Acids (b) Alkalis
(c) Toxins (d)✓ Enzymes

330. Which of the following are denatured by heat?
(a) Vitamins (b) Minerals
(c)✓ Enzymes (d) Fats

331. The changes in foods during storage can be brought about by:
(a) Enzymes present in the food
(b) Enzymes from micro-organisms that contaminate the food
(c)✓ Both the enzymes present in the food and by the enzymes from micro-organisms that contaminate the food
(d) None of the above

332. Optimum temperature of enzymatic reaction is usually:
(a)✓ 37°C (b) 57°C
(c) 07°C (d) 17°C

333. Maltose or malt sugar is obtained from starchy materials by the action of the enzyme:
(a)✓ Diastase (b) Amylase
(c) Pectinase (d) Lipase

334. The cellulose is converted to sugar by the action of enzyme:
(a)✓ Cytase (b) Diastase
(c) Lipase (d) Zymase

335. The maltose is hydrolyzed to glucose by the action of the enzyme:
(a) Diastase (b)✓ Maltase
(c) Amylase (d) Protease

336 Lactose can be hydrolysed by the enzyme to yield the constituent monosaccharides D-glucose and D-galactose:
(a) Amylase (b) Lipase
(c)✓ Lactase (d) Diastase

337. The most appropriate enzyme preparation used commercially to increase the yields in fruit processing is:
(a) Amylases (b) Lipases
(c) Proteases (d)✓ Pectineases

338. Biochemical reaction of fat oxidation by the enzyme lipoxygenase results in off-flavors, mainly due to formation of:
(a)✓ Aldehydes and ketones
(c) Acids and bases
(b) Alcohols and esters
(d) All of the above

339. Which of the following enzyme is responsible for degradation of fat in the rice bran?
(a) Amylase (b) Protease
(c)✓ Lypase
(d) None of the above

340. Which of the following is responsible for the enzymic browning in fruits and vegetables?
(a)✓ Peroxidase (b) Protease
(c) Lipase (d) Pectinases

341. All microorganisms growing in food are:
(a) Pathogenic
(b) Spoilage agents
(c) Causes of food allergy
(d)✓ None of the above

342. The two major groups of microorganisms found in food are:
(a) Bacteria and mold
(b)✓ Bacteria and fungi
(c) Bacteria and yeast
(d) None of the above

343. ______ are generally the fastest growing micro organisms:
(a)✓ Bacteria (b) Yeast
(c) Mold (d) Fungi

344. ______ are microscopic form of plants made up of branching intertwined multi-cellular filaments, which do not contain any chlorophyll:
(a)✓ Molds (b) Bacteria
(c) Yeasts (d) Viruses

345. The fuzzy or cottony growth on chapati, bread or cooked rice is ______ growth, which makes the food unfit to eat:
(a) Bacteria (b)✓ Mold
(c) Yeast (d) None of these

346. Moulds reproduce through formation of:
(a) Buds (b) Binary fission
(c) Spontaneous generation
(d)✓ Spores

347. The ______ that grow on acid foods such as tomatoes have low resistance to heat and are destroyed at boiling water temperature:
(a) Bacteria (b) Viruses
(c)✓ Yeasts and moulds
(d) None of these

348. ______ are able to grow over a wider range of temperature than bacteria, with many being capable to grow at refrigerator temperatures.
(a) Yeasts (b)✓ Molds
(c) Fungi (d) None of these

349. ______ is unicellular microorganisms, which have spherical or ovoid cells:
(a) Molds (b) Bacteria
(c)✓ Yeasts (d) Viruses

350. ______ reproduces by budding of cells:
(a) Molds (b) Bacteria
(c)✓ Yeasts (d) Viruses

351. Generally ______ are found on the surface of fruits and other foods which contain sugar:
(a) Molds (b) Bacteria
(c)✓ Yeasts (d) Viruses

352. ______ can grow in varied conditions, namely quite low pH, high salt or sugar concentrations and in the absence of oxygen:
(a) Molds (b) Bacteria
(c)✓ Yeasts (d) Viruses

353. ______ are the smallest form of plant life:
(a) Molds (b)✓ Bacteria
(c) Yeasts (d) Viruses

354. Which of the following multiply by fission?
(a) Molds (b)✓ Bacteria
(c) Yeasts (d) Viruses

355. ______ grow most readily in neutral conditions and growth is generally inhibited by acids:
(a) Molds (b)✓ Bacteria
(c) Yeasts (d) Viruses

356. Most food fermentations are brought about by the action of ______
(a) Molds (b) Bacteria
(c)✓ Yeasts (d) Viruses

357. *Idli* and *dhokla* are good examples of _____ foods:
(a) Fast (b) Organic
(c) Putrified (d)✓ Fermented

358. The process, which renders the food almost free from microorganisms is known as:
(a)✓ Sterilization
(b) Pasteurization
(c) Homogenization
(d) Oxygenation

359. Mycotoxins are toxic substances produced by:
(a) Rats (b) Bacteria
(c)✓ Fungi (d) Insects

360. A relatively small number of moulds produce toxic materials in food. These toxins are known as:
(a) Exotoxins (b) Endotoxins
(c)✓ Mycotoxins (d) Mould toxins

361. ______ are produced in harvested crops, such as groundnuts, wheat, millet and rye if these are not dried promptly after harvest and stored:
(a) Exotoxins (b) Endotoxins
(c)✓ Aflatoxins (d) Toxins

362. If groundnuts are stored with a high moisture content, (that is above 15 %), the black mould (Aspergillus flavus) present in the nuts produces:
(a)✓ Aflatoxin (b) Exotoxin
(c) Endotoxin (d) No toxin

363. Generally, reducing the Ow of a given food _____ the lag period and _____ the growth rate during the logarithmic phase:
(a)✓ Increases, decreases
(b) Decreases, increase
(c) Decreases, decreases
(d) Increases, increase

364. Which of the following tend to spoil the fruit juices, syrups, molasses, honey, jams and jellies?
(a)✓ Yeasts (b) Bacteria
(c) Viruses (d) None of these

365. Most heat resistant spores are produced by the species:
(a)✓ Clostridium
(b) Steptococcus
(c) Aspergillus
(d) Saccharomyces

366. Common indicator organism for water pollution is:
(a)✓ Entamoeba histolytica
(b) Eschericia coli
(c) Cholera vibrio
(d) Salmonella typhis

367. The optimum temperature for growth of thermophilic microorganisms are:
(a) 20-30°C (b) 30-40°C
(c)✓ 45-65°C (d) None of these

368. The optimum temperature for growth of mesophilic microorganisms are:
(a) 20-30°C (b)✓ 20-45°C
(c) 45-60°C (d) None of these

369. The optimum temperature for growth of psychrophilic microorganisms are:
(a) 20-30°C (b) 30-40°C
(c) 55-65°C (d)✓ None of these

370. The heat enduring microorganisms are also known as:
(a)✓ Thermoduric
(b) Thermophilic
(c) Mesophilic
(d) None of these

371. The bacteria staphylocci has a ______ shape:
(a)✓ Spherical (b) Rod
(c) Spiral
(d) None of these

372. The bacteria can be identified as Gram positive and gram negative bacteria depending on the stain characteristics. The Gram positive have a ______ color:
(a) Red (b)✓ Blue
(c) Green (d) None of these

373. Which of the following are aquatic photosynthetic organisms?
(a) Protozoa (b) Fungi
(c)✓ Cyanobacteria
(d) Archaea

374. The bacteria can be classified as heterotrophs orautotrophs. Here autotrophs mean that:
(a) The bacteria of this group are unicellular organisms
(b) The bacteria of this group live on a particular plant tissue
(c)✓ The bacteria of this group make their own food by using the energy of sunlight
(d) The bacteria of this group give a single type of stain

375. The bacteria normally move using their cytoplasmic tail known as:
(a) Hyphae (b) Mycelium
(c)✓ Flagella (a) None of these

376. Which of the following is not a fungi?
(a) Rusts (b) Mildews
(c) Smuts (d) Mushrooms
(e)✓ None of the above

377. Fungi are saprophytic. It means:
(a)✓ They feed on decaying organic matter
(b) They feed on living food tissues
(c) They multiply very quickly
(d) They are resistant to moderate temperature and pH.

378. Which of the following are not considered as living bodies?
(a) Bacteria
(b) Cyanobacteria
(c)✓ Virus (d) Protozoa

379. Which of the following make up the largest group of organisms in the world in terms of number of biomass?
(a) Bacteria (b)✓ Protozoa
(c) Fungi (d) Molds

380. The bacteria can be classified as aerobic and anaerobic depending on whether they require (or do not require) oxygen for their growth. There is another group, which is called facultative anaerobic bacteria. They are the bacteria, which:
(a)✓ Can consume oxygen from the air if present, but can also grow in its absence
(b) Require anaerobic conditions, but plenty of moisture for their growth
(c) Require anaerobic condition, but also require water and darkness for their growth
(d) Are large bacterial spores that can survive anaerobic conditions for a few days

381. Which of the following is a textural quality of foods?
(a) Toughness (b) Hardness
(c) Crispiness
(d)✓ All of the above

382. The term not related to food texture is:
(a)✓ Adhesiveness
(b) Hardness
(c) Gumminess
(d) None of these

383. Which of the following is related to the damage of fruits and vegetables?
(a) Maxwell theory
(b)✓ Hertz contact stress theory
(c) Navier Stoke's theory
(d) Dey's apparatus

384. The cell wall is composed of:
(a) Starch (b) Proteins
(c) Fats
(d)✓ Polysaccharides

385. When a fruit ripens, ______
(a)✓ Starch is broken down to sugars
(b) Proteins are disintegrated
(c) Sugars are converted to starch
(d) None of the above

386. ______ is the sum-total of the sensory impression formed, when we eat food:
(a) Texture (b)✓ Flavor
(c) Smell (d) Odor

387. There are ______ primary taste sensations:
(a) Five (b)✓ Six
(c) Four (d) Seven

388. Plant acids and their salts, sugars, tannins and sulphur compounds are the substances responsible for ______ of vegetables:
(a) Color (b)✓ Flavor
(c) Texture (d) None of these

389. The characteristic penetrating flavor of garlic, onion and related species is due to ______ compounds:
(a)✓ Sulphur (b) Iron
(c) Phosphorus (d) Magnesium

390. Which of the following does not contribute to the flavor of fruits?
(a) Sugars (b) Organic acids
(c) Organic esters
(d) Tannins
(e)✓ None of the above

391. Tannins contribute ______ to the fruit flavor:
(a)✓ Astringency
(b) Sweetness
(c) Tartness (d) Salty

392. Fruits are generally a blend of sweet and _____ taste:
(a) Salty (b) Bitter
(c)✓ Sour (d) Astringent

393. The quality of most foods and beverages decreases with storage or holding time. Exceptions include:
(a) Cereals (b) Oil seeds
(c)✓ Distilled spirits
(d) Tuber crops

394. Supermarkets will generally not accept the product into their distribution centers unless at least _____ % of the shelf life remains:
(a) 50 (b)✓ 75
(c) 90 (d) 100

CEREALS

395. Cereals are seeds of the ______ family:
(a) Grain (b)✓ Grass
(c) Herb (d) Shrub

396. Cereals contain approximately _____ per cent carbohydrates:
(a)✓ (a) 65-75 (b) 45-55
(c) 85-95 (d) None of these

397. ______ contains most of the starch and protein of the kernel, but very little mineral matter or fiber, and only a trace of fat:
(a) Aleurone layers
(b) Seed coat
(c)✓ Endosperm (d) Germ

398. Which of the following serves as a store of nutrients for the seed when it germinates?
(a) Aleurone layers
(b) Seed coat
(c) Endosperm (d)✓ Germ

399. Hard wheat is higher in ______ than soft wheat and is better suited for making breads:
(a) Fat (b) Carbohydrate
(c) Fiber (d) Protein

400. Which protein gives stickiness to the dough?
(a) Albumin (b) Casein
(c)✓ Gluten (d) Globulin

401. When whole wheat is coarsely ground into large particles, we get:
(a)✓ Dahlia
(b) Whole wheat flour
(c) Maida (d) None of these

402. The usual water requirement for cooking rice is ______ its own volume of water:
(a)✓ Twice (b) Thrice
(c) Four times (d) Five times

403. ______ process gelatinizes the starch and changes the cooking characteristics of the rice:
(a)✓ Parboiling (b) Polishing
(c) Steeping (d) Drying

404. _____ are made after soaking the paddy in hot water and then pounding it:
(a) Puffed rice (b) Instant rice
(c)✓ Flaked rice (d) Cooked rice

405. Millet is a common name applied to edible seeds of members of the _____ family:
(a) Grain (b)✓ Grass
(c) Herb (d) Shrub

406. Millet proteins lack in the essential amino acid:
(a) Lysine (b) Methionine
(c)✓ Histidine (d) Cystine

407. The millets are advised to be eaten along with dhals or milk products to make up the ______ deficiency in millets:

(a) Fat (b) Carbohydrate
(c) Fiber (d)✓ Protein

PULSES AND OILSEEDS

408. The recommended daily intakes for a man (60 kg, doing moderate work) for pulses is _____ and fat is ______ per capita per day:
(a)✓ 60g, 30 g (b) 60 g, 45 g
(c) 35 g, 60 g (d) 35 g, 35 g

409. Pulses are edible seeds of ______ plants:
(a) Gramiane (b) Solanacees
(c)✓ Leguminous
(d) Cucurbitae

410. Tur or Pigeon pea is also known as ____ dal (Cajanus cajon):
(a)✓ Arhar (b) Masur
(c) Channa (d) Mung

411. The dais or pulses contains about _____ per cent proteins:
(a) 5 to 10 (b)✓ 18 to 24
(c) 40 to 50 (d) 60 to 80

412. When pulses are germinated, there is an increase in the concentration of ______ group of vitamins along with vitamin C, which is also produced in the process of germination:
(a) A (b)✓ B
(c) D (d) E

313. It is not advisable to add soda to pulses while cooking, as its alkaline pH accelerates the destruction of:
(a) Vitamin A (b)✓ Thiamin
(c) Vitamin E (d) Vitamin D

314. Dals tend to foam while cooking. Addition of a few drops of ______ prevents formation of foam and dal does not boil over:
(a) Soda (b)✓ Oil
(c) Glycerin
(d) Sugar solution

315. _____ occurs in certain dough due to the presence of yeasts in the flour:
(a)✓ Fermentation
(b) Putrification
(c) Sulphitation
(d) Carbonation

416. The _____ released in the fermentation leavens the dough and produces a fluffy texture when steamed (*idli*) or fried (*dosai*):
(a) Oxygen (b) Nitrogen
(c)✓ Carbon dioxide
(d) Methane

417. Fermentation occurring in food products is an example of _____ respiration:
(a) Aerobic (b)✓ Anaerobic
(c) Both aerobic and anaerobic
(d) Either aerobic or anaerobic

418. Trypsin inhibitors and haemagglutinins are some of the toxic substances, naturally present in some ________
(a) Cereals (b)✓ Pulses
(c) Oilseeds
(d) Fruits and vegetables

419. The toxic substances (trypsin inhibitors and haemagglutinins) present in pulses are destroyed by ______
(a) Light (b) Soaking
(c)✓ Heat (d) Fermentation

420. Lipid oxidation in foods are accelerated by:
(a) Al and Cu (b)✓ Fe and Cu
(c) Hg and Cu (d) Cu and Zn

EGG, FISH, POULTRY AND MEAT

421. The egg white contains about ____ per cent protein:
(a)✓ 10 (b) 20
(c) 25 (d) 30

422. _____ is a method used to determine quality of eggs in shell:
(a) Lighting (b) Focusing
(c)✓ Candling (d) Shaking

423. Eggs, when beaten, form elastic films, which can trap air. This air expands during baking, and gives fluffy, spongy product. Thus, eggs are used

extensively as ______ in baked products such as cakes and muffins:
(a) Foaming agents
(b)✓ Leavening agents
(c) Binding agents
(d) Thickening agents

424. Egg proteins coagulate on heating. The coagulation of proteins is accompanied by binding of moisture and increase in viscosity. Therefore, eggs can be used as _____ in food preparation:
(a) Foaming agents
(b) Leavening agents
(c) Binding agents
(d)✓ Thickening agents

425. The egg proteins coagulate between 65 and 70°C and help to hold the shape of the product in which these are used. Eggs are therefore useful as ______ in cutlets, chops, and fried fish:
(a) Foaming agents
(b) Leavening agents
(c) Binding agents
(d)✓ Thickening agents

426. Besides proteins, eggs contain phospholipids such as lecithin, which makes the egg an excellent ______ in products such as mayonnaise:
(a) Foaming agents
(b) Leavening agents
(c) Binding agents
(d)✓ Emulsifying agents

427. Dressed fish when cut into slices from head to tail is called:
(a) Dressed (b)✓ Steaks
(c) Chunks (d) Fillets

428. Fish liver oils are rich in vitamins ______ and _____
(a)✓ A,D (b) B,C
(c) A,B (d) B,D

429. Fish contains _____ fatty acids:
(a) Monounsaturated
(b) Saturated
(c) Free
(d)✓ Polyunsaturated

430. Those fish, which contain ______ per cent fat, are called fatty fish:
(a)✓ 6 to 20 (b) 15 to 25
(c) 35 to 40 (d) None of these

431. As fish are an aquatic food, they provide us:
(a)✓ Iodine (b) Fluorine
(c) Chlorine (d) Sodium

432. The fat content of fish is _____ than that of meat:
(a) Higher (b)✓ Lower
(c) Same as (d) None of these

433. Poultry provides ______ calories than meat:
(a) Higher (b)✓ Lower
(c) Same as (d) None of these

434. The average protein content of meat ranges from ______ per cent:
(a) 4 to 10 (b)✓ 16 to 23
(c) 25 to 35 (d) 45 0 55

435. Collagen and elastin are two types of ____ in meat:
(a) Fatty tissues
(b)✓ Connective tissues
(c) Muscle tissues
(d) None of the above

436. During cooking of meat, collagen is softened and converted to:
(a) Elastin (b) Pectin
(c)✓ Gelatine
(d) None of these

437. ______ does not become soft during cooking:
(a)✓ Elastin (b) Pectin
(c) Gelatine
(d) None of these

438. _____ is the pigment that gives the characteristic red colour to meat:
(a)✓ Myoglobin (b) Hemoglobin
(c) Anthocyanin
(d) None of the above

439. When the animal is slaughtered, certain changes take place. The meat starts to stiffen. This change is called:
(a) Stiffening (b)✓ Rigor mortis

(c) Tignre (d) Tendarizing

440. Oxidation of glycogen brings about production of:
(a) Acetic acid (b)✓ Lactic acid
(c) Citric acid
(d) Hydrochloric acid

441. The amount of _____ stored in a particular animal decides the amount of lactic acid produced after slaughter:
(a)✓ Glycogen (b) Glucose
(c) Lactose (d) None of these

442. Stiff muscles of the animal meat start softening after holding for some time. This is called:
(a) Rigor mortis
(b)✓ Aging
(c) Softening (d) Curing

443. Tenderness in the meat _____ with holding time:
(a) Decreases (b)✓ Increases
(c) Does not change

444. Meat is treated with salt, sugar, sodium nitrate and spices to give different flavours. Smoke is used some times to give a desirable flavour and to improve the keeping quality of meat. This process is called:
(a)✓ Curing (b) Salting
(c) Flavoring (d) Tenderizing

VEGETABLES

445. _____ vegetables have very low calorie content. They are rich sources of vitamins A and C, and minerals calcium and iron:
(a)✓ Leafy (b) Tuber
(c) Fruit (d) Seed

446. _____ helps to ensure the smooth movement of food through the digestive tract:
(a)✓ Leaves (b) Tubers
(c) Fruits (d) Seeds

447. The intensity of the green colour is an indirect indicator of the _____ value of the leaves:
(a)✓ Vitamin A (b) Vitamin B
(c) Vitamin C (d) Vitamin D

448. The light coloured, bleached inner leaves of plants that form compact heads e.g., cabbage, contain little value:
(a)✓ Vitamin A (b) Vitamin B
(c) Vitamin C (d) Vitamin D

449. The roots and tubers and bulbs are characterized by _____ water content than leaves and other vegetables:
(a)✓ Lower (b) Higher
(c) Equal (d) None of these

450. Most of the utilizable carbohydrate in the roots and tubers and bulbs are in the form of _____ with a small amount of it in the form of sugar:
(a)✓ Cellulose (b) Starch
(c) Disaccharides
(d) Monosaccharides

451. We should avoid the use of _____ in vegetables, as it increases the loss of vitamin C and B-complex vitamins-thiamin and riboflavin:
(a) Salt (b) Sugar
(c)✓ Soda (d) Acid

452. Peas and corn become less palatable during storage due to sugar being converted to:
(a) Acid (b) Fat
(c) Water (d)✓ Starch

453. Vegetable salads are important means of providing part of the need for:
(a)✓ Fibre (b) Protein
(c) Fat (d) Sugars

FRUITS

454. _____ are the mature ovaries of plants, which contain the seeds:
(a)✓ Fruits (b) Vegetables
(c) Roots (d) Flowers

455. The edible portion of most of the fruits is the fleshy part of the _____ surrounding the seeds:
(a) Thalamus (b)✓ Pericarp
(c) Epicarp (d) Endosperm

456. Which of the following is a multiple fruit developed from a cluster of several flowers?
(a) Mango (b) Banana
(c)✓ Pineapple (d) Litchi

457. ______ are fruits which have a stone or pit to hold the seed:
(a) Aggregate (b) Pomes
(c) Pericarp (d)✓ Drupes

458. ______ are fruits which have a sac, which holds the seeds:
(a) Aggregate (b)✓ Pomes
(c) Pericarp (d) Drupes

459. ______ are fruits which are developed from several ovaries in one flower:
(a)✓ Aggregate (b) Pomes
(c) Pericarp (d) Drupes

460. The fruits such as bananas, papayas; pineapples, mangoes, guavas, melons, lemons, limes, grapefruits, pomeloes, oranges, tangerines, dates;-figs, berries, etc. come under the category of ______ fruits:
(a) Temperate (b)✓ Tropical
(c) Arid zone (d) None of these

461. Fruits, such as amla, guava, cashew fruit, are extremely good sources of vitamin:
(a) A (b) B
(c)✓ C (d) D

462. It is advisable to squeeze a slice of lime on fruit salad to prevent loss of vitamin:
(a) A (b) B
(c)✓ C (d) D

463. The contact of cut surfaces of fruits with air can be reduced by adding light syrup or cream, which helps in reducing loss of vitamin:
(a) A (b) B
(c)✓ C (d) D

464. Fruits are not very good sources of:
(a)✓ Calcium (b) Iron
(c) Magnesium (d) Sugars

465. The cell walls, the fruit skin, and all structural parts of fruits are made up of celluloses and hemicelluloses, which are:
(a) Proteins (b) Lipids
(c) Sugar
(d)✓ Polysaccharides

466. The pectic substances, which cement the cells together, are found in the cell walls. These polysaccharides are ______ in the human body:
(a) Digested (b)✓ Not digested
(c) Easily digested
(d) Digested slowly

SPICES

467. _____ are used in small amounts in cookery as flavouring, colouring, appetizing and stimulating agent:
(a)✓ Spices (b) Additives
(c) Colours (d) Flavours

468. In case of cloves and saffron, we use the _____ parts of the plant:
(a)✓ Floral (b) Fruit
(c) Berries (d) Seeds

469. Chillies, tamarind, cocum, cardamom are the spices for which we use the _____ parts of plants:
(a) Floral (b)✓ Fruit
(c) Berries (d) Seeds

470. In case of black pepper, we use the ______ parts of plants:
(a) Floral (b) Fruit
(c)✓ Berries (d) Seeds

471. For mustard, cumin, coriander, fenugreek, we use the _____ parts of the plants:
(a) Floral (b) Fruit
(c) Berries (d)✓ Seeds

472. We use ______ part of ginger and turmeric plant as food:
(a)✓ Rhizomes (b) Aril
(c) Leaves (d) Kernels

473. Mint, 'tejpat', bay leaves, curry leaves, coriander are the spices in which we use the ______ parts:
(a) Rhizomes (b) Aril
(c)✓ Leaves (d) Kernels

474. Nutmeg is the spice in which the _____ part of the plant is used:
(a) Rhizomes (b) Aril
(c) Leaves (d)✓ Kernels

475. Mace is the spice in which the _____ part of the plant is used:
(a) Rhizomes (b)✓ Aril
(c) Leaves (d) Kernels

476. Cinnamon, cassia are the spices in which we use the _____ parts of the plant:
(a) Rhizomes (b)✓ Bark
(c) Leaves (d) Kernels

477. Asafoetida is the spices in which we use the _____ parts of the plant:
(a) Rhizomes (b) Aril
(c)✓ Exudates of bark
(d) Kernels

478. Since minute amounts of spices are used in food preparations, the _____ contributed to the meal are negligible:
(a) Flavors (b) Pungency
(c)✓ Nutrients (d) None of these

479. The characteristic pungent flavor of chillies is due to:
(a) Tannin (b)✓ Capsaicin
(c) Anthocyanin
(d) None of the above

FOOD PROCESSING

480. The process which gelatinised starch gets converted liquid to gel is called as:
(a) Putrefaction
(b) Gel formation
(c) Gelatinisation
(d)✓ Retrogradation

481. The enzymatic browning is due to the oxidation of phenols is:
(a) Phenolase (b) Tyrosinase
(c) Catecholase
(d)✓ Orthoquinones

482. MSG is used as:
(a) Colour enhancer
(b) Thickening agent
(c)✓ Flavour enhancer
(d) Emulsifier

483. Vacreation refers to:
(a) Vacuum packaging
(b) Vacuum creation
(c)✓ Vacuum sterilization
(d) Vacuum pasteurization

484. What is the reason for blanching vegetables prior to freezing?
(a) To maintain colour
(b) To improve texture
(c) To prevent microbial activity
(d)✓ To denature enzymes

485. Expand AFD:
(a) Accelerated Fish Drying
(b) Accelerated Force Drying
(c)✓ Accelerated Freeze Drying
(d) Accelerated Frequencing Drying

486. The device helps to detect the odour and flavour of food sample:
(a)✓ Electronic nose
(b) Electronic detector
(c) Electronic analyser
(d) Elecctronic odour separator

487. MPN stands for:
(a)✓ Most Probable Number
(b) Multi Probable Number
(c) Maximum Probable Number
(d) Minimum Probable Number

488. The preservation technique using radiation is also known as:
(a)✓ Cold sterilization
(b) Dry sterilization
(c) Heat sterilization
(d) Uperization

489. Phosphatase test is used in the analysis of:
(a) Water (b) Tea
(c)✓ Milk (d) all of these

MICROBIOLOGY: NUTRITION OF BACTERIA

490. A synergistic effect is observed when:
(a) One organism removes an inhibitory substance for another

(b) One organism produces a growth factor utilized by another

(c) Microbial alteration of pH, aw, Eh favours the growth of another

(d)✓ All of the above

491. Generation time is:

(a) Time required for the population to double

(b) Time required for the initial adjustment

(c) Obtained by expression t/n, where t = time interval, n = number of generation

(d)✓ Both (a) and (c)

492. The term facultative anaerobe refers to an organism that:

(a) Doesn't use oxygen but tolerates it

(b) Is killed by oxygen

(c)✓ Uses oxygen when present or grows without oxygen when absent

(d) Requires less oxygen than is present in air

493. The microorganisms that grow best in a low-oxygen environment is called a (n):

(a) Aerobe (b) Anaerobe

(c) Facultative

(d)✓ Microaerophile

494. *Pseudomonas pseudoflava* can grow as:

(a) Chemo-lithotrophs

(b) Chemo-organotrophs

(c)✓ Both (a) and (b)

(d) None of these

495. Which of the following is the suitable temperature range for mesophiles?

(a) 20-30°C (b)✓ 25-40°C

(c) >40°C (d) None of these

496. Exponential phase of growth curve of bacteria is of limited duration because of:

(a) Rise in cell density

(b) Accumulation of toxic metabolites

(c) Exhaustion of nutrients

(d)✓ All of these

497. A culture broth tube was very turbid at the bottom of the tube but clear at the top of the tube indicating that the:

(a) Broth is sterile

(b) Organism can tolerate oxygen

(c)✓ Organism cannot produce superoxide dismutase and/or catalase

(d) Organism should be grown in an anaerobic chamber

498. In the exponential phase, the cells and cell mass:

(a) First increases then decreases

(b) Decreases

(c) Are constant

(d)✓ Double at a constant rate

499. What is the primary source of food for marine life?

(a)✓ Phytoplankton

(b) Zooplankton

(c) Sea weed (d) Grass

500. Postgates assay technique is useful in determining if a cell is viable even though it is:

(a)✓ Incapable of cell division

(b) Too small to see

(c) An obligate aerobe

(d) A thermophile

501. Most of your body weight is from:

(a) Protein

(b) Carbohydrates

(c) Skin (d)✓ Water

502. This is not seen through a microscope:

(a) Fats (b)✓ Calories

(c) Carbohydrates

(d) Proteins

503. An ounce of which of the following provides the most energy:

(a) Fat (b)✓ Sugar

(c) Protein (d) Carbohydrate

504. Which of these foods supply the protein that includes all the essential

amino acids in just the right balance?
(a) celery and rhubarb
(b)✓ Eggs
(c) Whole grains
(d) Cheeses

505. One reason you eat protein is to maintain:
(a) Blood flow
(b) Hydration
(c)✓ Body parts (d) sweat

506. Cells are made up of water and:
(a)✓ Protein
(b) Carbohydrates
(c) Vitamins and minerals
(d) Fiber

507. Calories are not seen because they are:
(a) Protein
(b) Carbohydrates
(c) Vitamins and minerals
(d)✓ A measurement

SOME IMPORTANT MCQs ON PROTEIN

Tick the correct one:

1. Protein is an energy source for the body:
(a)✓ Yes (b) No
(c) Don't know

2. Minerals are an energy source for the body:
(a) Yes (b)✓ No
(c) Don't know

3. Carbohydrates are an energy source for the body:
(a)✓ Yes (b) No
(c) Don't know

4. Fatty acids are the breakdown products for proteins:
(a) Yes (b)✓ No
(c) Don't know

5. Amino acids are the breakdown products for proteins:
(a)✓ Yes (b) No
(c) Don't know

6. Glycogen is a breakdown product for carbohydrates:
(a)✓ Yes (b) No
(c) Don't know

7. Taurine is an essential amino acid in a cat's diet:
(a)✓ Yes (b) No
(c) Don't know

8. Fat in the diet spoils the taste:
(a) Yes (b)✓ No
(c) Don't know

9. Vitamin C is a fat-soluble vitamin:
(a) Yes (b)✓ No
(c) Don't know

10. Vitamin A is a water-soluble vitamin:
(a)✓ Yes (b) No
(c) Don't know

11. Calcium is a macro-mineral in the diet:
(a)✓ Yes (b) No
(c) Don't know

12. Iodine is a macro-mineral in the diet:
(a) Yes (b)✓ No
(c) Don't know

13. Zinc is a trace element mineral neede in the diet:
(a)✓ Yes (b) No
(c) Don't know

14. Fresh water should be available at al times for an animal:
(a)✓ Yes (b) No
(c) Don't know

15. Nutritional needs depend on life stage
(a)✓ Yes (b) No
(c) Don't know

16. Dogs are true carnivores:
(a) Yes (b)✓ No
(c) Don't know

17. Cats are true carnivores:
(a)✓ Yes (b) No
(c) Don't know

FOOD & NUTRITION

NUTRITION, FOOD AND FOOD NUTRIENTS – MCQS

Tick the correct one:

1. Food, food nutrients and nutrition means:
   - (a) All kinds of animals and plants take foods for living.
   - (b) The plants take water, minerals and manure while the animals take food, milk, eggs, fruits, etc. for their livelihood.
   - (c) These types of things which are essential for living are called food.
   - (d) That is, the materials which help animals and plants to grow up and to live is called food.
   - (e) It is not possible to live taking only one kind of food.
   - (f) However, after taking food, some biochemical changes happen in human body.
   - (g) This process is called nourishment.
   - (h)✓ All of the above

Food means:
- (a) The substance which helps to grow properly, protects the body from decay and loss, keeps body well, provides strength and energy, regulates the body and makes it healthy, active and well.
- (b) Rice, pulses, fish, meat, vegetables, fruits, water etc.
- (c)✓ (a) & (b)
- (d) None of these

Food regulates the body processes in various ways. It helps to:
- (a) Protect the body from decay and enhances its growth
- (b) Produce heat and energy
- (c) Protect the body from diseases by increasing the immune system
- (d) Regulate the internal process to keep the body healthy and fit
- (e)✓ All of the above

4. The nature of ingredients of food are:
   - (a) Various kinds of chemical substances exist in foods.
   - (b) Due to these chemical substances, food can regulate the body in various ways.
   - (c) These very chemical substance are called food ingredients.
   - (d) These ingredients do not exist equally in all food.
   - (e)✓ All of the above
5. In nature, we get how many types of food ingredients and these are:
   - (a) Protein
   - (b) Carbohydrates
   - (c) Fats
   - (d) Minerals
   - (e) Vitamins
   - (f) Water
   - (g)✓ All of the above
6. Definition of Nutrition is:
   - (a) A bio-chemical process.
   - (b) Through this process after taking food, it is digested in human body and afterwards it transforms into various substances.
   - (c) These digested ingredients are plain sugar, e.g glucose, amino acid, fat etc.
   - (d) Through a biochemical process, these elements help to develop tissues, protect body from decay and provide power and energy.
   - (e) This process is called nutrition.
   - (f) The scientific study of nutrition is called nutrition science.
   - (g)✓ All of the above
7. The classification of food ingredients:

(a) Sources
(b) Functions
(c) Needs and the effects of deficiency
(d)✓ All of the above

8. Protein is:
(a) The most important ingredient in forming muscles and tissues of animals and plants.
(b) In the year 1838 Mular first recognized the presence of protein as nitrogenous compound in animal body and plants.
(c) It is very much important for the body formation and growth.
(d)✓ All of the above

9. Structure element is:
(a) The basic element of protein is amino acid.
(b) If protein is divided chemically, various amino acids will be found.
(c) The amino acid is made of ingredients like carbon, hydrogen, oxygen and nitrogen.
(d) Through various admixture, the amino acids make protein.
(e) There are nearly 25 amino acids which constitute protein.
(f) The amino acid which is not created inside the body is called essential amino acid.
(g)✓ All of the above

10. There are how many amino acids which are essential for human body:
(a) Leucine
(b) Lysine
(c) Methionine
(d) Tryptophan
(e) Phenylalanine
(f) Threonine
(f) Isoleucine and valino
(g)✓ All of the above

11. Protein can be classified how many groups:
(a) According to its source;
(b) According to the availability of essential amino acid
(c) According to its formation and nature
(d)✓ All of the above

12. Sources of proteins are:
(a) Proteins Animal
(b) Proteins Plant
(c)✓ (a) & (b)
(d) None of these

13. Animal Proteins is:
(a) The protein which we get from animals is called animal protein.
(b) In the foods which are originated from animals, it exists abundantly and so these types of foods are called protein.
(c) The essential amino acid exists proportionately.
(d) The protein of milk is casein, the protein of egg is albumin etc.
(e)✓ All of the above

14. Plant Proteins means:
(a) The protein which we get form plants is called plant protein.
(b) In it, a less amount of th essential amino acid exists.
(c) This protein is called secondar protein.
(d) This type of protein is found i various rice, pulses, wheat an maize.
(e)✓ All of the above

15. The essential of amino acids are:
(a) Complete Proteins
(b) Partially complete proteins
(c) Incomplete proteins
(d)✓ All of the above

16. Complete Protein means:
(a) The protein which we get fro animals is the best one and so is called the complete protein.

(b) It is called the complete protein because the essential amino acid exists here abundantly.
(c) These are, milk, eggs, cheese, fish, meat, etc.
(d)✓ All of the above

17. Partially complete Protein means:
(a) These proteins are getting from plant sources.
(b) It is called the partially complete protein because all the essential amino acids are not exists here but the existing amino acids together act as a complete protein.
(c) It is a good source of protein for non-vegetarian.
(d) These are pulses, ground-nut, peas, wheat, rice etc.
(e)✓ All of the above

18. Incomplete Protein means:
(a) There are some types of food with protein but these foods are not considered the source of protein.
(b) Because the essential amino acid does not exist here.
(c) These types of food are gelatin, vegetable and fruits.
(d)✓ All of the above

19. Classification of Protein as per formation and nature are:
(a) Simple proteins
(b) Attached Proteins
(c) Derived Proteins
(d) Sources of Protein
(e)✓ All of the above

20. Simple proteins means:-
(a) Amino acid is found in these proteins after hydrolysis
(b) For example Albumin (blood), gelatin (flesh) etc.
(c)✓ (a) & (b)
(d) None of these

21. Attached Proteins means:
(a) In this protein, in addition to hydro-amino acid, some non-protein substances are found.
(b) For example, Phospheprotein (Phosphorus which consists of lipo protein where lipid or fat exists), glycoprotein where carbohydrates exist.
(c)✓ (a) & (b)
(d) None of these

22. Derived Proteins means:
(a) These proteins are a part of the molecules of natural proteins or these are a transformed stage of simple or attached proteins.
(b) These are transformed form of original protein created through digestion.
(c) For example, Proteoses and Peptones.
(d)✓ All of the above

23. Sources of Protein means:
(a) The best sources of protein are beef, mutton, poultry, milk, various milk products, fish of different kind.
(b) Besides, various types of pulses and beans, peas, soybean, nuts, peanuts are the other sources of protein.
(c)✓ (a) & (b)
(d) None of these

24. The sources of protein are:
(a) Fish (b) Meat
(c) Milk (d) Lentil
(e) Ground nut (f) Coconut
(g) Chicken meat
(h)✓ All of the above

25. The functions of Protein: Protein works in various ways in the human body:
(a) Mainly protein helps to build up human body, keep the body formation properly, nourish and protect the body.

(c) Extra protein is stored in the body and it supplies energy and power when these are needed.

(d) Protein helps to supply oxygen to every cell of the body and participates in building hemoglobin.

(e) Protein helps to create enzymes. which are essential for digestion

(f) Protein helps to build antibodies which destroy infectious bacteria. That is, protein develops the power of resistance to diseases.

(g) Protein helps to produce mother's milk.

(h)✓ All of the above

26. The necessity of protein in human body:

(a) The need of protein vary with age and sex. After birth, the growth of a child continues up to 25 years.

(b) But this rate of growth becomes slower.

(c) So during the period of rapid growth, the need of protein for the human body becomes the highest.

(d) But when, the child becomes an adult, protein is needed only for the protection of the body.

(e)✓ All of the above

27. Results of Protein deficiency are:

(a) Due to protein deficiency, human body cannot be formed proportionately and if the daily loss of energy is not fulfilled, the body will lose its weight.

(b) The normal growth of body gets hindered.

(c) Disturbance in digestion is created and various stomach diseases like the problem of liver arise.

(d) Due to lack of protein, the fatal disease like Kwashiorkor occurs. As a result, water stores in the body and the body becomes bloodless.

(e) Prolonged deficiency of protein leads to mental disorder. Loss of appetite is seen. The hair and the skin lose their natural glaze.

(f)✓ All of the above

28. Carbohydrates means:

(a) Are the main sources of energy in the human body.

(b) Most of the natural foods contain carbohydrates.

(c) In the plants. carbohydrates are formed using carbon, hydrogen and oxygen through the process of photosynthesis.

(d) Are colourless. orderless. crystalline and sweet.

(e)✓ All of the above

29. Structure means:

(a) When hydrogen and oxygen mixing with carbon with a proportion of 2:1 produce a compound

(b) The compound is called carbohydrate. It is sweet in test.

(c)✓ (a) & (b)

(d) None of these

30. Classification: The other name of carbohydrate is saccharide. Carbohydrate is divided into three groups and these are:

(a) Mono-saccharide

(b) Di-saccharide

(c) Polysaccharide

(d)✓ All of the above

31. Carbohydrate or Saccharides:

(a) Monosaccharide

(b) Disaccharide

(c) Polysaccharide

(d)✓ All of the above

32. Mono- saccharide means:

(a) The carbohydrate which is constituted with only one simple molecule of carbohydrate
(b) **For example:** Glucose – rice, wheat, grapes, the carbohydrate glucose of blood.
(c) Fructose – The carbohydrate which is found in honey and ripe fruits is called Fructose.
(d) Galactose – This mono-saccharide is not be found freely in nature. After being broken, the carbohydrate lactose of milk forms galactose.
(e)✓ All of the above

33. Di- saccharide means:
(a) The carbohydrate which is formed with the two same carbohydrate molecule
(b) For example: Lactose – It is the carbohydrate of milk. It can be found in breast-milk. After breaking lactose, glucose and gelatos are found.
(c) Sucrose- Di- saccharide is found in sugar-cane, beef and in various vegetable and fruits. After breaking sucrose glucose and fructose are found.
(c) Maltose – It is found in the starch of rice. It is also called malt sugar.
(d)✓ All of the above

34. Polysaccharide means:
(a) The carbohydrates which are formed with various mono-saccharide
(b) For example: Starch – It is found in rice, wheat and the vegetables which grow beneath the soil (e.g. potatoes, sweet potatoes, carrots, turnips, tubers etc.). It is also found in the trunk of plants (in the arum) and also in the roots of plants. Apples, bananas also contain starch. After breaking starch, various glucose molecules are found.
(c) Cellulose – It is found in the trunk and root of plants and also in the cover of fruits. It is also found in rice, wheat, maize and pulses.
(d) Cellulose is the principal element which forms the plant's body.
(e) Glycogen – It is an animal carbohydrate. Excessive carbohydrates is stored in the human body as glycogen.
(f)✓ All of the above

35. Sources of Carbohydrates are:
(a) The carbohydrates are to be found in sugar, molasses, fruits, carrots, pulses, rice, wheat, honey, sugar-cane, beet etc.
(b) Besides, it can be found in fish, meat and milk.
(c) The carbohydrates which are produced are mostly found in the trunks, roots, leaves and seeds.
(d) In the world, in every year, 3 crore tons of carbohydrates are produced. The 1/3 of it is collected from sugar cane.
(e)✓ All of the above

36. Functions of Carbohydrates are:
(a) Carbohydrates work as the fuel for the body. They burn in the cells easily and provide us energy.
(b) They spare protein form creating energy.
(c) They help to burn fat.
(d) As glycogen they are stored in various organs and after breaking provide fuel for energy.
(e) The carbohydrates called cellulose prevent constipation.
(f)✓ All of the above

37. The demand carbohydrate is:
- (a) The demand of carbohydrates in food depends on the demand of calories of a human being.
- (b) The foods which contain carbohydrates are known as the energy foods.
- (c) To meet the basic demands of the body, human beings need calories.
- (d) Besides, they also need calories for performing any type of hard work or for working or moving.
- (e) The demand of carbohydrate depends on the labour which a person does.
- (f) Those who perform much physical labour need more calories. According to the nutritionist, 58-60% demand of calories of human beings should be met by carbohydrates.
- (g) The demand of carbohydrates can be met from fat and protein. An adult person should need 300-650 grams (differs as per labour) of cereals everyday.
- (h) It will provide 1200- 2600 calories because 1 gm carbohydrate produces almost 4 calories of energy.
- (i)✓ All of the above

38. The result of the deficiency of carbohydrates:
- (a) Due to the deficiency of carbohydrates in the body, energy begins to grow by breaking the reserved protein and fats of the body. As a result, the body loses the normal weight.
- (b) Less intake of carbohydrates produces ketone and due to this serious disease ketosis occurs.
- (c) The quantity of acid in blood increases. As a result human being can lose their senses.
- (d) It creates serious hazards in the metabolism of the brain.
- (e)✓ All of the above

39. Results of the excess intake of carbohydrates:
- (a) The excess intake of carbohydrates is deposited in the body as fats.
- (b) The excess glucose is transformed into glycogen and is deposited in the liver and in the body.
- (c) As a result it increases the weight of the body. Excess intake of glucose causes dental caries and diabetes.
- (d)✓ All of the above

40. Fats and Oil:
- (a) These are very important ingredients of food.
- (b) It is the most important element which creates energy.
- (c) Like protein and carbohydrates, fat is also needed. The fat stored in our body as energy. It helps to formulate human cells.
- (d)✓ All of the above

41. Structure of fats means:
- (a) Fats is formed with the chemical admixture of glycerol and fatty acid.
- (b) That is glycerol + fatty acid fats.
- (c) Among the substance of fat, oil, fat, ghee, butter are important.
- (d) The characteristics of fat depend on the characteristics of fatty acid.
- (e) The fatty acid which has saturated carbon, is called fats.
- (f)✓ All of the above

42. Classification of fats is:
- (a) Due to the structural characteristics of fat

(b) Some are found in liquid form and the others are found in hard form.
(c)✓ (a) & (b)
(d) None of these

43. The fats are of major types:
(a) Animal fats
(b) Animal oils
(c) Plant oils
(d)✓ All of the above

44. Animal fats means:
(a) It includes foods like ghee, butter, fat
(b) The yolk of an egg, meat with fat, cheese etc.
(c)✓ (a) & (b)
(d) None of these

45. Animal oil means:
(a) It is found in animals oil
(b) The livers of fish
(c)✓ (a) & (b)
(d) None of these

46. Plant oils means:
(a) It is found in oil seeds like mustard, soyabean, sesame seeds, linseed, maize, coconut, olive, sunflower oil
(b) It is also found in different types of nuts
(c)✓ (a) & (b)
(d) None of these

47. Sources of fats and oil are:
(a) Ghee, butter, fat
(b) Oil of fish, fatty meat
(c) Yolk of eggs, milk, margarine,
(d) Vegetables, oil of oil-seeds,
(e) Mustard, sesame oil, linseed,
(f) Maize, soybean, nut, coconut
(g)✓ All of the above

48. Functions of Fats and oils are:
(a) Fats and oils create more energy than carbohydrates
(b) They prevent the loss of energy
(c) They help to keep the skin shiny and protect the skin form skin diseases
(d) Some vitamins help in absorption.
(e)✓ All of the above

49. Requirements of fats and oils are:
(a) In every day meal, there should be 15 grams of animal fats and 5-10 gram oil.
(b) About 20-30 % of the total calories of a human being should come from fat and oil.
(c) To meet the requirements of the calories of a human being, it is recommended to take 30-60 gram fat every day.
(d)✓ All of the above

50. Deficiency of fats and oils:
(a) If there is a continuous deficiency of fat and oil in food, the deficiency of some vitamins occurs in the body. These are fat soluble vitamins like A, D, E, K.
(b) Deficiency of fat and oil for a long time makes the wastage of the reserved protein and creates weight loss.
(c) The body becomes dry and loses its beauty.
(d) Lack of essential fatty acid creates eczema in the children and the aged people lose the resistance power of the body.
(e)✓ All of the above

51. Effects of excess fats are:
(a) Excessive intake of fats is harmful for the human body.
(b) Overweight is the result of excessive fat intake which destroys the natural beauty of the body.
(c) Leads to high blood pressure and heart diseases.
(d)✓ All of the above

52. Minerals means:
(a) Besides protein, fat and carbohydrates, the body needs

for its structure and functions, certain basic inorganic elements.

(b) They regulate the body process in many ways.

(c) Since they are excreted daily by faeces, urine and sweat, they need to be replenished daily.

(d) Some minerals are required in small amounts; they are called trace elements.

(e) Their requirement must be met daily, otherwise abnormality in body's metabolism is seen.

(f)✓ All of the above

53. Minerals may be classified how many group:

(a) Macro minerals: These are required in large amounts, e.g. calcium. phosphorus, sodium, potassium, chlorine, magnesium and sulphur.

(b) Trace minerals: These are required in small quantities, e.g., iron bromine, zinc manganese, copper, cobalt.

(c)✓ (a) & (b)

(d) None of these

54. Calcium and phosphorus means:

(a) The human body contains about 2.3-3.4 percent of calcium and phosphorus of its total body weight.

(b) Among the different minerals, calcium and phosphorus are found in the highest amount in the body.

(c)✓ (a) & (b)

(d) None of these

55. Calcium and phosphorus sources are:

(a) Milk, meat, liver

(b) Fish, small fish, cheese

(c) Pulses, curds, eggs

(d) Nuts, cauliflower

(e) Dark green leaves, cereals

(f) Dates, fruits, etc.

(g)✓ All of the above

56. Sources of minerals are:

(a) Egg, Cheese, Milk

(b) Ripe Banana, Beans

(c) Lentil, Papya, Fish

(d)✓ All of the above

57. Calcium and phosphorus functions are:

(a) Necessary for the formation of bone and teeth.

(b) Calcium helps in the function of blood clotting.

(c) Calcium is necessary for contraction and expansion of cardiac muscles.

(d) They maintain the normal activity of nervous system.

(e) They regulate the muscular excitability and tone.

(f) Carbohydrate and fat need phosphorus for their intermediate metabolism.

(g)✓ All of the above

58. Requirements Calcium and phosphorus are:

(a) Found in foods that are rich in protein.

(b) It is needed to form the body structure of the growing child as well as for keeping a sound health of the grown up person.

(c) The daily requirement of calcium is about 800mg.

(d) Additional calcium in the diet is required during pregnancy and lactation.

(e) In this stage, the daily requirement of calcium phosphorus is about 1.2-1.8 gm.

(f)✓ All of the above

59. Effects of deficiency calcium and phosphorus are:

(a) Poor teeth and bone formation.

(b) Retarded growth.

(c) Osteomalacia in women

(d)✓ All of the above

60. Iron is:
- (a) The quantity of iron in human body is much less than calcium and phosphorous.
- (b) But, this small quantity of iron is an essential nutrient.
- (c) The total iron content of the normal adult is estimated to be about 3-4 gm.
- (d) Two third of the iron in the body is present in blood and the rest is present in the cell, bone-marrow, liver and spleen.
- (e)✓ All of the above

61. Iron sources are:
- (a) Egg yolk, fish
- (b) Meat, liver, dark green leaves,
- (c) Molasses, rice, wheat, legumes,
- (d) Dried fruits, etc.
- (e)✓ All of the above

62. Iron functions are:
- (a) The body uses iron to make hemoglobin for red blood cells.
- (b) It is essential for carrying oxygen to different tissues. About 0.3 percent of iron in hemoglobin is essential for respiration.
- (c) Iron plays an important role in metabolism.
- (d)✓ All of the above

63. Iron requirements are:
- (a) About 10mg. of iron is required daily by an adult person.
- (b) Influenced by some factors, such as-requirements of body, type of diet, rate of absorption, loss of iron, etc.
- (c)✓ (a) & (b)
- (d) None of these

64. Iron deficiency cause:
- (a) Anemia is the most common cause of ill health in women.
- (b) This anemia is probably the result of many factors, such as-loss of iron during menstruation, repeated pregnancies, etc.
- (c) Also occurs in adult male and children.
- (d) It is the result of many factors, such as-poor intake and absorption, hook worm infection, excessive bleeding from injury, piles or ulcer.
- (e) This anemia is produced by prolonged deficiency of iron.
- (f)✓ All of the above

65. Iodine is:
- (a) The most essential and important micro element for human body.
- (b) Body stores iodine in the thyroid gland.
- (c) The essential constituent of the hormone thyroxin produced by the thyroid gland.
- (d) About 65% of thyroxin is iodine.
- (e) Small amount of iodine also occurs in various cells and blood.
- (f) Thyroxin hormone is essential for metabolism and regulation of the body temperature.
- (g)✓ All of the above

66. Important sources of iodine are:
- (a) Include food from the sea, such as-sea fish and iodized salt.
- (b) Besides, it exists in plants grown in soil that contains enough iodine, such as the sea coast area.
- (c)✓ (a) & (b)
- (d) All of the above

67. Iodine requirements are:
- (a) Necessary for the synthesis of thyroxin.
- (b) It is essential for metabolism.
- (c) It is essential for the development of hair, skin and bone.

(d) It helps in the normal development of brain.

(e) Iodine is necessary for the foetal development in pregnancy and essential for production of breast milk.

(f)✓ All of the above

68. Iodine deficiency cause:

(a) The common effect of iodine deficiency is goitre. If sufficient iodine is not taken, the enlargement of the thyroid gland takes place resulting the disease called goiter.

(b) Mental deficiency is caused by iodine deficiency.

(c) The child's physical growth is retarded.

(d) Abortions and congenital abnormalities are seen in iodine deficiency.

(e)✓ All of the above

69. Sodium and potassium are:

(a) Essential minerals for life.

(b) The adult body contains about 90gm. of sodium and 200gm. of potassium.

(c) The bones contain about 30 gm. of sodium.

(d) The cells of the body contain potassium and body fluids contain sodium. Sodium and potassium are also found in bones and teeth.

(e)✓ All of the above

70. Sodium and potassium sources are:

(a) Salted fish, cheese

(b) Canned meat, butter, eggs

(c) Milk, fish, meat

(d) Legumes, wheat, molasses,

(e) Puffed rice, nuts,

(f) vegetables, fruits, e.g.

(g) Spinach, beets, potatoes, tomatoes, carrots, bananas, oranges, grapes, and coffee etc. contain sodium and potassium.

(h)✓ All of the above

71. Sodium and potassium functions are:

(a) It regulates acid-base balance of the body.

(b) It regulates osmotic pressure of plasma and tissue fluid and thus protects the body against excessive fluid loss.

(c) Potassium maintains normal transmission of nerve impulses.

(d) Sodium plays an important role in the absorption of carbohydrate and fats form the small intestines.

(e) It regulates water deficiency.

(f)✓ All of the above

72. Sodium and Potassium requirements are:

(a) The requirement of sodium is 2-4gm a day which can be easily supplied in a normal diet.

(b) A normal adult requires only 2-4gm of potassium daily.

(c)✓ (a) & (b)

(d) None of these

73. Sodium and Potassium deficiency are:

(a) Muscle weakness, dizziness, difficulty in breathing.

(b) Anorexia, nausea, cold extremities and low blood pressure.

(c) Mental weakness and confusion.

(d) Hazards in digestive system, etc.

(e)✓ All of the above

74. Vitamins means:

(a) Vital to life.

(b) A very small quantity of vitamin is needed for maintaining good health.

(c) However, if vitamins are not present in sufficient quantities

in the diet, vitamin deficiency diseases occur.
(d) Only a hundred years ago, scientists found the vitamins in fresh food.
(d) Plants synthesize various vitamins in their body.
(e) Green leaves of plants are the main sources of vitamins.
(f) It is also found in trunks, flowers, fruits and roots of trees.
(g) Man and other animals are directly dependent on plants.
(h) The herbivorous animals are also good source of vitamins for man.
(i) Animals store vitamins in liver, muscles, and other parts of the body.
(j) Cows store vitamins in milk and ducks store in eggs for meeting their need for future off springs.
(k)✓ All of the above

75. Classification of vitamin is:
(a) So far about fifteen different vitamins have been isolated in a pure state from natural foods.
(b) Almost all of them are essential for human beings.
(c)✓ All of the above
(d) None of these

76. Vitamins may be classified broadly how many groups:
(a) Fat soluble vitamins i.e., vitamins that are soluble in fats and fat solvents but insoluble in water.
(b) Water soluble vitamins i.e., vitamins that are soluble in water but insoluble in fats and fat solvents.
(c)✓ All of the above
(d) None of these

77. Fat soluble vitamins are:
(a) Vitamin-A and carotenes,
(b) Vitamin-D
(c) Vitamin-E
(d) Vitamin-K
(e) All of the above

78. Water soluble vitamins are
(a) Thiamine (Vitamin-B1)
(b) Riboflavin (Vitamin-B_2)
(c) Niacin and Niacin amide
(d) Pyridoxine (Vitamin-B_6)
(e) Pantothenic acid
(f) Folic acid
(g) Vitamin-B_{12}
(h) Ascorbic acid or civitamic acid.
(i)✓ All of the above

79. General functions of vitamin are:
(a) They are essential for growth
(b) They help to maintain good health and vigour during growing stage.
(c) They help in keeping normal digestion.
(d) They help in utilization of minerals in the body.
(e) They help in metabolism of every produced nutrient
(f) They are essential for strengthening the nervous system.
(g) They protect the body against infections.
(h) They are essential for normal and healthy productive system.
(i)✓ All of the above

80. In ______ Mccollum and Davis discovered Vitamin-A.
(a)✓ 1913 (b) 1914
(c) 1915 (d) 1916

81. Vitamin-A is:
(a) Insoluble in water but soluble in fat.
(b) Ordinary cooking does not destroy Vitamin A but over cooking does, because it is

easily destroyed by air and light during cooking.

(c)✓ (a) & (b)

(d) All of the above

82. Sources Vitamin A is/are:

(a) Found in both animal and plant sources.

(b) Animal sources such as-milk, eggs, butter etc. contain Vitamin A, but plant sources contain pro-vitamin A which is converted into vitamin A in the human body.

(c) Carotene, a precursor of vitamin A is found in all yellow, orange and chlorophyll containing compounds.

(d) Carotene is converted into Vitamin A in the body.

(e) Cod liver oil, liver, ghee, egg, cheese etc. contain large amounts of Vitamin A and carrots, pumpkins, ripe mangoes, dark green leaves, maize, ripe tomatoes, ripe papayas etc. contain large amounts of pro-vitamin-A.

(f)✓ All of the above

83. Functions of vitamin-A is:

(a) The retina of the eyes contain photosensitive cells of rhodesian and iodeosin, which help vision in both dim and bright light, Vitamin A is an integral part of such cells and helps in normal vision.

(b) Essential for the health of the epithelial tissues of skin, and kidney.

(c) It helps to prevent dental decay.

(c) It helps to form strong bones and teeth.

(d) It helps in normal reproduction.

(e) Also helps in the digestion of carbohydrates.

(f)✓ All of the above

84. Vitamin-A requirements are:

(a) 750μg retinol of vitamin A and 4500μg of carotene are required for boys, adult males and females and pregnant mothers.

(b) For lactating mother is 1200μg retinol of vitamin A and 7200μg of carotene.

(c)✓ All of the above

(d) None of these

85. Vitamin-D means:

(a) Fat soluble vitamin D is sometimes called the anti-rachitic vitamin.

(b) The term rachitic denotes the condition of a person affected with vitamin D deficiency disease called rickets.

(c) It is also called the disease of poor children.

(d) The scientists demonstrated that cod liver oil contains vitamin D.

(e) The other name of this vitamin is cholecalciferol.

(f)✓ All of the above

86. Vitamin-D sources:

(a) Liver oil of seafish such as, Cod, Halibut, Shark etc, animal fat, liver, milk butter, ghee, egg yolk are good sources of this vitamin.

(b) Not present in foods of vegetable origin.

(c) Ultra violet ray of sunlight converts the cholesterol in the skin into vitamin D.

87. Vitamin D functions are:

(a) Vitamin D helps in the absorption and utilization of calcium and phosphorus in the body.

(b) It promotes strong bones and teeth formation by properly utilizing calcium and phosphorus.

(c)✓ (a) & (b)

(d) None of these

88. Vitamin-D deficiency cause:

(a) Delayed dentition and ability to walk is seen.

(b) Calcium and phosphorus of food are not properly utilized.

(c) Calcification of bone does not take place. This results in the disease called rickets in vitamin D deficient infants and children.

(d) In this disease the head is usually enlarged, elongated and box like. Skeletal malformations occur because of the inability of soft bones to withstand the stress of body weight.

(e)✓ All of the above

89. Recommended allowance of vitamin D (Daily allowances in International Unit):

(a) New born child and pre-school child = 10μg or 400 IU

(b) Adolescents and adults = 5μg or 200 IU

(c) Pregnancy and Lactation = 10μg or 400 IU

(d) In tropical countries a lower quantity than the above recommended intake can be taken because the skin is exposed to sunlight for a considerable period of the day.

(e)✓ All of the above

90. Vitamin-E means:

(a) A fat soluble vitamin.

(b) The biochemical name of vitamin-E is Tocopherol.

(c)✓ (a) & (b)

(d) None of these.

91. Vitamin-E sources:

(a) Cod liver oil, ground nut, wheat,

(b) Oat, sunflower seed oil,

(c) Soyabean oil, palm oil,

(d) Germinated gram, wheat germ, eggs etc.

(e)✓ All of the above

92. Vitamin-E functions are:

(a) It is an active antioxidant, preventing oxidation of carotene, vitamin A and unsaturated fatty acids.

(b) It is required for normal reproductive function in animals and it prevents sterility in them.

(c)✓ (a) & (b)

(d) None of these

93. Vitamin-E requirements are:

(a) An average adult diet contains enough vitamin-E.

(b) The daily allowance is 5-10mg.

(c)✓ (a) & (b)

(d) None of these

94. Deficiency of Vitamin E is:

(a)✓ Animals causes reproductive failure.

(b) Delayed dentition and ability to walk is seen.

(c) Calcium and phosphorus of food are not properly utilized

(d) None of these

95. The scientist Dam discovered Vitamin-K between the years:

(a)✓ 1910 and 1935

(b) 1900 and 1925

(c) 1810 and 1935

(d) None of these

95. Vitamin-K is:

(a) Another important vitamin which is soluble in fat.

(b) It is also known as anti bleeding or coagulation substance.

(c) More than half of the human requirement of vitamin K is met from the synthesis by bacteria in the lower intestinal tract of the human body.

(d) So a deficiency of vitamin K is not normally seen.

(e)✓ All of the above

96. Vitamin-K sources:

(a) Green leaves cauliflower,

(b) Cabbage, lettuce, spinach, egg yolk, beef liver etc.

(c)✓ (a) & (b)

(d) None of these

97. Vitamin-K functions are:

(a) Promotes proper blood clotting after cuts or surgery and thus prevents bleeding.

(b) It helps in energy producing reactions of the body.

(c)✓ (a) & (b)

(d) None of these

98. Vitamin-K deficiency cause:

(a) Leads to lowering of prothrombin (a protein that helps to form blood clot) level and increased clotting time of blood. This helps the hemorrhagic condition.

(b) Lack of bile secretion occurs due to deficiency of vitamin K.

(c)✓ (a) & (b)

(d) None of these

99. Vitamin-K requirement is:

(a)✓ For adult is 40 micrograms per day and for pregnant woman is 1mg per day.

(b) 750µg retinol of vitamin A and 4500µg of carotene are required for boys, adult males and females and pregnant mothers.

(c) For lactating mother is 1200µg retinol of vitamin A and 7200µg of carotene.

(d) None of these

100. Vitamin-B is:

(a) Not a single vitamin.

(b) Vitamin B complex comprises of 15 chemical substances.

(c) It has been established that eight of these are required by human body.

(d) These are – Thiamine (B_1), Riboflavin (B_2), Nicotinic acid folic acid, pyridoxine (B_6), Cyarocobalamine (B_{12}), biotin and pantothenic acid.

(e) These all B Vitamins are water soluble and can be destroyed by heat.

(f)✓ All of the above

111. Thiamine or B_1 is:

(a) Prevents beriberi

(b) It is called antiberiberi vitamin.

(c)✓ (a) & (b)

(d) None of these

102. Vitamin-B sources are:

(a) Rice polishing (parboiled),

(b) Wheat, oats, liver, egg, yeast,

(c) Fish, milk, green pea, soybean,

(d) Peanut, pulses, wheat germ, germinated gram, etc.

(e)✓ All of the above

103. Vitamin-B functions are:

(a) It plays an important role in energy production from the metabolism of carbohydrate.

(b) It is necessary for energy production from fat and protein metabolism.

(c) It helps in normal growth of human body.

(d)✓ All of the above

104. Vitamin-B requirement is:

(a)✓ The daily requirement of thiamine is 0.5 mg per 1000 calorie demand.

(b) For adult is 40 micrograms per day and for pregnant woman is 1mg per day.

(c) For lactating mother is 1200µg retinol of vitamin A and 7200µg of carotene.

utilizing calcium and phosphorus.

(c)✓ (a) & (b)

(d) None of these

88. Vitamin-D deficiency cause:

(a) Delayed dentition and ability to walk is seen.

(b) Calcium and phosphorus of food are not properly utilized

(c) Calcification of bone does not take place. This results in the disease called rickets in vitamin D deficient infants and children.

(d) In this disease the head is usually enlarged, elongated and box like. Skeletal malformations occur because of the inability of soft bones to withstand the stress of body weight.

(e)✓ All of the above

89. Recommended allowance of vitamin D (Daily allowances in International Unit):

(a) New born child and pre-school child = 10μg or 400 IU

(b) Adolescents and adults = 5μg or 200 IU

(c) Pregnancy and Lactation = 10μg or 400 IU

(d) In tropical countries a lower quantity than the above recommended intake can be taken because the skin is exposed to sunlight for a considerable period of the day.

(e)✓ All of the above

90. Vitamin-E means:

(a) A fat soluble vitamin.

(b) The biochemical name of vitamin-E is Tocopherol.

(c)✓ (a) & (b)

(d) None of these.

91. Vitamin-E sources:

(a) Cod liver oil, ground nut, wheat,

(b) Oat, sunflower seed oil,

(c) Soyabean oil, palm oil,

(d) Germinated gram, wheat germ, eggs etc.

(e)✓ All of the above

92. Vitamin-E functions are:

(a) It is an active antioxidant, preventing oxidation of carotene, vitamin A and unsaturated fatty acids.

(b) It is required for normal reproductive function in animals and it prevents sterility in them.

(c)✓ (a) & (b)

(d) None of these

93. Vitamin-E requirements are:

(a) An average adult diet contains enough vitamin-E.

(b) The daily allowance is 5-10mg.

(c)✓ (a) & (b)

(d) None of these

94. Deficiency of Vitamin E is:

(a)✓ Animals causes reproductive failure.

(b) Delayed dentition and ability to walk is seen.

(c) Calcium and phosphorus of food are not properly utilized

(d) None of these

95. The scientist Dam discovered Vitamin-K between the years:

(a)✓ 1910 and 1935

(b) 1900 and 1925

(c) 1810 and 1935

(d) None of these

95. Vitamin-K is:

(a) Another important vitamin which is soluble in fat.

(b) It is also known as anti bleeding or coagulation substance.

(c) More than half of the human requirement of vitamin K is met from the synthesis by bacteria in the lower intestinal tract of the human body.

(d) So a deficiency of vitamin K is not normally seen.
(e)✓ All of the above

96. Vitamin-K sources:
(a) Green leaves cauliflower,
(b) Cabbage, lettuce, spinach, egg yolk, beef liver etc.
(c)✓ (a) & (b)
(d) None of these

97. Vitamin-K functions are:
(a) Promotes proper blood clotting after cuts or surgery and thus prevents bleeding.
(b) It helps in energy producing reactions of the body.
(c)✓ (a) & (b)
(d) None of these

98. Vitamin-K deficiency cause:
(a) Leads to lowering of prothrombin (a protein that helps to form blood clot) level and increased clotting time of blood. This helps the hemorrhagic condition.
(b) Lack of bile secretion occurs due to deficiency of vitamin K.
(c)✓ (a) & (b)
(d) None of these

99. Vitamin-K requirement is:
(a)✓ For adult is 40 micrograms per day and for pregnant woman is 1mg per day.
(b) 750µg retinol of vitamin A and 4500µg of carotene are required for boys, adult males and females and pregnant mothers.
(c) For lactating mother is 1200µg retinol of vitamin A and 7200µg of carotene.
(d) None of these

100. Vitamin-B is:
(a) Not a single vitamin.
(b) Vitamin B complex comprises of 15 chemical substances.
(c) It has been established that eight of these are required by human body.
(d) These are – Thiamine (B_1), Riboflavin (B_2), Nicotinic acid, folic acid, pyridoxine (B_6), Cyarocobalamine (B_{12}), biotin and pantothenic acid.
(e) These all B Vitamins are water soluble and can be destroyed by heat.
(f)✓ All of the above

111. Thiamine or B_1 is:
(a) Prevents beriberi
(b) It is called antiberiberi vitamin.
(c)✓ (a) & (b)
(d) None of these

102. Vitamin-B sources are:
(a) Rice polishing (parboiled),
(b) Wheat, oats, liver, egg, yeast,
(c) Fish, milk, green pea, soybean,
(d) Peanut, pulses, wheat germ, germinated gram, etc.
(e)✓ All of the above

103. Vitamin-B functions are:
(a) It plays an important role in energy production from the metabolism of carbohydrate.
(b) It is necessary for energy production from fat and protein metabolism.
(c) It helps in normal growth of human body.
(d)✓ All of the above

104. Vitamin-B requirement is:
(a)✓ The daily requirement of thiamine is 0.5 mg per 1000 calorie demand.
(b) For adult is 40 micrograms per day and for pregnant woman is 1mg per day.
(c) For lactating mother is 1200µg retinol of vitamin A and 7200µg of carotene.

(d) None of these

105. Vitamin-B deficiency cause:
   (a) The symptoms of thiamine deficiency include weakness, loss of appetite, nausea and mental instability. These defects happen because of diminished utilization of carbohydrate and production of energy.
   (b) Severe deficiency of thiamine produce causes beriberi.
   (c)✓ (a) & (b)
   (d) None of these

106. Riboflavin (B_2) is:
   (a) This water soluble vitamin is stable to heat; so it is not destroyed by heat.
   (b) However, it is sensitive to light.
   (c)✓ (a) & (b)
   (d) None of these

107. Riboflavin (B_2) sources are:
   (a) Dark green leafy vegetables,
   (b) Fruits, whole grains and cereals,
   (c) Liver, dried yeast, egg yolk,
   (d) Milk, fish, meat, pulses, nuts etc.
   (e)✓ All of the above

108. Riboflavin (B_2) functions are:
   (a) It functions with other substances to metabolize carbohydrates, fats and proteins for the release of energy from food.
   (b) It is necessary for growth and good health.
   (c)✓ (a) & (b)
   (d) None of these

109. Riboflavin requirement is
   (a)✓ 0.6mg per 1000 cal.
   (b) 0.4mg per 1500 cal.
   (b) 0.5mg per 200 cal.
   (d) None of tehse

110. Riboflavin deficiency cause:
   (a) Does not cause any disease
   (b) But the symptoms include cracking at lip corners, sore tongue, loss of hair, eye problems etc.
   (c)✓ (a) & (b)
   (d) None of these

111. Folic acid means:
   (a)✓ The other name of this vitamin is Folacin.
   (b) Not a single vitamin.
   (c) A fat soluble vitamin.
   (d) None of these

112. Folic acid sources are:
   (a) Liver, yeast, peanuts, pulses,
   (b) Gram, rice, wheat
   (c) Green leafy vegetables, kidney
   (d)✓ All of the above

113. Folic acid functions are:
   (a) If helps in the metabolism of protein.
   (b) It is vital for the formation of red blood cells.
   (c)✓ (a) & (b)
   (d) None of these

114. Folic acid requirements are:
   (a) Infant = 100mg
   (b) Pregnant mother = 400mg
   (c) Adult (female) = 200mg
   (d) Lactating mother = 300mg.
   (e)✓ All of the above

115. Folic acid deficiency is:
   (a) The most important deficiency symptom in girls and in pregnant women is the development of a kind of anemia
   (b) Which is called megaloblastic anemia
   (c)✓ (a) & (b)
   (d) None of these

116. Niacin is:
   (a) Which includes two other substances called nicotinic acid

and nicontinamide, is a water soluble vitamin.

(b) Not destroyed by heat, acid, alkali, light and oxidation.

(c)✓ (a) & (b)

(d) None of these

117. Niacin sources is/are:

(a) Found in meat, liver, wheat, pulses, nuts, oil seeds, gram and green leafy vegetables.

(b) It is also formed by the conversion of amino acid tryptophan.

(c) Tryptophan present in the dietary protein is converted into niacin in the human body.

(d) It has been estimated that 60mg of tryptophan yield 1 mg niacin.

(e)✓ All of the above

118. Niacin functions are:

(a) It helps in carbohydrate metabolism and in fat synthesis from carbohydrate and protein.

(b) It prevents the disease pellagra.

(c)✓ (a) & (b)

(d) None of these

119. Niacin deficiency cause:

(a) Pellagra, is the deficiency disease caused by the lack of sufficient niacin in the diet.

(b) The symptoms of this condition is generally known as the disease of three D's i.e. dermatitis, diarrhoea, and dementia.

(c) Weakness, headache, loss of weight, loss of appetite, indigestion and eczema like skin disease on exposed surfaces.

(d)✓ All of the above

120. Niacin requirements are:

(a) Adult male - 18.2 mg Adult female - 13.2 mg

(b) Pregnant woman - 15.1 mg

(c) Lactating woman - 18.1 mg

(d)✓ All of the above

121. Vitamin-C is:

(a) A water soluble substance with a sour (acid) taste.

(b) It is easily destroyed by oxygen and heat.

(c) Not stored in the human body. So it is essential to take Vitamin C daily.

(d) It prevents scurvy. So it is also called antiscorbutic vitamin.

(e)✓ All of the above

122. Vitamin-C sources are:

(a) Citrus fruits and fresh vegetables contain large amounts of vitamin C.

(b) Amlakis, guavas, oranges,

(c) Lemons, starfruits, pineapples,

(d) Black berries, tomatoes

(e) Green peppers, etc.

(f) Germinated seeds, lettuce and other green leaves

(g)✓ All of the above

123. Functions of Vitamin-C are:

(a) It helps in keeping normal and healthy gums and teeth.

(b) It speeds up healing of wounds after surgery of injury.

(c) It helps in the metabolism of carbohydrate, protein and fat.

(d) It helps the body to build and maintain a protein-collagen necessary for strengthening connective tissues.

(e) It helps the body to maintain normal and healthy skin.

(f) It helps in preventing many types of infectious diseases.

(g)✓ All of the above

124. Requirements of Vitamin-C are:

(a) Children - 20 mg

(b) Adult - 30 mg

(c) Pregnant and lactating mother - 50 mg

(d)✓ All of the above

125. Deficiency of Vitamin-C is:
- (a)✓ The disease scurvy is produced by prolonged
- (b) Pellagra, is the deficiency disease caused by the lack of sufficient niacin in the diet.
- (c) The symptoms of this condition is generally known as the disease of three D's i.e. dermatitis, diarrhoea, and dementia.
- (d) None of these

126. Water is:
- (a) A vital element for all animals.
- (b) About 70 percent of the total body weight consists of water..
- (c) Almost every part of body like blood, tissues, nerves, teeth, bones
- (d)✓ All of the above

127. Sources of water are:
- (a) Almost all foods contain some water.
- (b) Liquid diet or different types of drinks such as – milk, lassi, sherbet, tea, coffee, fruit juice, soup, sugar cane juice, coconut water, etc.
- (c) Other soft or solid diets
- (d)✓ All of the above

128. Functions of water are:
- (a) It helps to regulate and integrate different types of functions of the body.
- (b) It works as an essential medium for excreting waste products through urine, faeces and sweat.
- (c) Takes part in all metabolic processes and is essential for digestion. It prevents constipation.
- (d) It maintains the normal concentration of blood and works as a transport medium for transporting the essential elements. It also helps in the regulation of body temperature and keeps the body healthy.
- (e)✓ All of the above

129. Requirements of water are:
- (a) The amount of water lost through urine, sweat and faeces should be replaced to maintain a water balance.
- (b) The total water requirement of an adult under ordinary condition is about 2 litres.
- (c)✓ (a) & (b)
- (d) None of these

130. Deficiency of water cause:
- (a) Increases concentration of blood.
- (b) As a result, muscle weakness and nerve weakness, problems in digestion of food occur.
- (c) Leads to thirst and low blood pressure and increase body temperature.
- (d)✓ All of the above

HEALTH CARE

Write the correct answer:

1. Which of the following diseases is hereditary?
(a) Dysentery
(b) Tuberculosis
(c) Cancer
[✓ (d) Haemophilia]

2. ELISA test is prescribed for:
(a) Polio (b) Cancer
(c) Typhoid [✓ (d) AIDS]

3. Scurvy disease is caused by the shortage of:
(a) Vitamin A (b) Vitamin B
[✓ (c) Vitamin C] (d) Vitamin D

4. Deficiency of Vitamin E causes:
(a) Rickets (b) Anaemia
[✓ (c) Sterility] (d) Beriberi

5. In which of the following diseases do the germs enter through open wounds?
[✓ (a) Tetanus] (b) Typhoid
(c) Sucrose (d) Beriberi

6. The sweetest sugar is:
[✓ (a) Fructose] (b) Sucrose
(c) Glucose (d) Lactose

7. Which of the following vitamins is essential for proper bone and teeth formation?
[✓ (a) Vitamin D] (b) Vitamin B
(c) Vitamin C (d) Vitamin A

8. Insulin is given to people suffering from which of the following diseases?
(a) Polio (b) Cancer
[✓ (c) Diabetes]
(d) Tuberculosis

9. Which of the following is a skin disease?
(a) Anaemia [✓ (b) Pellagra]
(c) Rickets (d) Cancer

10. When the lens of the eye becomes foggy, it is called:
[✓ (a) Myopia] (b) Cataract
(c) Presbyopia
(d) Hypermetropia

11. The vitamin which is very liable and easily destroyed during cooking as well as storage is:
(a) Vitamin A [✓ (b) Vitamin C]
(c) Vitamin B (d) Vitamin D

12. Diabetes is caused due to the malfunctioning of:
(a) Liver (b) Kidney
[✓ (c) Pancreas] (d) Spleen

13. Which of the following diseases is caused by the bite of mad dog:
[✓ (a) Hydrophobia]
(b) Hydrocephalus
(c) Hydroperitoneum
(d) None of these

14. Healing of wounds is hastened by vitamin:
(a) A (b) B
(c) C [✓ (d) K]

15. Dialysis is used when a patient has serious trouble with:
[✓ (a) Kidneys] (b) Liver
(c) Spleen (d) Heart

16. Which vitamin is provided by sunlight to the body?
(a) Vitamin A (b) Vitamin B
(c) Vitamin C [✓ (d) Vitamin D]

17. Hallucination can be caused by the:
(a) Nicotine (b) Aspirin
(c) Caffeine [✓ (d) LSD]

18. Milk is a poor source of:
(a) Proteins [✓ (b) Iron]
(c) Vitamins (d) Calcium

19. Night blindness is caused by the deficiency of:
[✓ (a) Vitamin A] (b) Vitamin B
(c) Vitamin C (d) Vitamin E

20. BCG is injected to get immunity from:
(a) Cholera (b) Polio
[✓ (c) Tuberculosis] (d) Small pox

21. Accumulation of water in tissues is

caused by the:
[✓ (a) Vitamin B] (b) Vitamin C
(c) Vitamin D (d) Vitamin A

22. Leprosy is treated by:
(a) Penicillin
(b) Erythromycin
[✓ (c) Sulphones]
(d) Tetracycline

23. Deficiency of iron in diet causes:
(a) Jaundice [✓ (b) Anaemia]
(c) Vomiting (d) Tension

24. A defect in eye lense due to dispersion of light is called:
(a) Myopia
[✓ (b) Chromatic aberration]
(c) Spherical aberration
(d) None of these

25. Goiter is caused by the deficiency of:
(a) Zinc (b) Chlorine
[✓ (c) Iron] (d) Iodine

26. Which part of the body is affected by drinking alcohol?
(a) Lungs [✓ (b) Liver]
(c) Kidney
(d) None of these

27. Which of the following diseases is caused due to allergic reaction?
[✓ (a) Leprosy] (b) Asthma
(c) Typhoid (d) Tetanus

28. Vitamin B-Complex represents a group of how many vitamins?
(a) 5 (b) 6
(c) 9 (d) 11

29. Balanced diet contains:
[✓ (a) Growth food nutrients]
(b) Animal proteins
(c) Macro nutrients
(d) None of these

30. Scurvy is a disease of:
(a) Eyes [✓ (b) Skin]
(c) Hair (d) Liver

31. The vitamin which cannot be had from any vegetables is:
(a) Vitamin B (b) Vitamin D
(c) Vitamin C (d) Vitamin K

32. Glucose syrup is made from:
(a) Oat (b) Wheat
[✓ (c) Maize] (d) Rice

33. Which of the following diseases is caused due to defective genes?
(a) Diabetes (b) Ulcer
[✓ (c) Haemophilia] (d) Cancer

34. Excess of vitamin A accumulates in:
(a) Arteries (b) Bones
(c) Liver (d) Intestine

35. Which of the following tests helps in diagnosis of cancer?
(a) X-ray (b) Urine test
[✓ (c) Biopsy test] (d) Blood test

36. Which of the following does not contain minerals:
[✓ (a) Milk] (b) Sugar
(c) Vegetable (d) Fruits

37. Meningitis is a disease which affects the:
(a) Kidneys (b) Brain
(c) Liver (d) Heart

38. The deficiency of which vitamin causes anemia?
(a) Vitamin B_1 (b) Vitamin B_6
[✓ (c) Vitamin B_{12}]
(d) None of these

39. Fluorine is present in:
(a) Sea-food
(b) Common salt
(c) Drinking water
(d) Green vegetable

40. The richest source of vitamin C is:
[✓ (a) Cod-liver oil] (b) Spinach
(c) Milk (d) Cheese

41. Urine of a diabetic patient contains more than average quantity of which of the following?
(a) Sugar (b) Urea
(c) Uric acid (d) Albumin

42. Which of the following does not provide carbohydrates?

(a) Fish (b) Cheese
(c) Butter (d) Spinach

43. The deficiency of vitamin B_2 may lead to which of the following?
(a) Osteomalacia [✓ (b) Cataract]
(c) Night blindness
(d) Diarrhoea

44. The vector of virus causing dengue fever is spread by:
(a) Housefly (b) Mosquito
(c) Sandfly
(d) None of these

45. Which of the following does not belong to the group of Vitamin B complex?
(a) Thiamine [✓ (b) Retinol]
(c) Riboflavin (d) Folic acid

46. Which nutrients are most likely to be affected by food processing and storage?
(a) Fats
(b) Carbohydrates
[✓ (c) Vitamins]
(d) Proteins

47. Which of the following diseases is not caused by bacteria?
(a) Typhoid [✓ (b) Measles]
(c) Leprosy
(d) Tuberculosis

48. Which of the following diseases is regarded as most fatal?
(a) Tuberculosis
(b) Yellow fever
[✓ (c) Leukaemia]
(d) Typhoid

49. Which of the following vitamins is considered helpful to keep the eyes healthy?
(a) Vitamin C [✓ (b) Vitamin A]
(c) Vitamin B (d) Vitamin D

50. Drugs used for relieving pain are called:
(a) Tranquilizers
[✓ (b) Analgesics]
(c) Antipyretic
(d) None of these

51. Mumps disease is caused by:
(a) Fungi [✓ (b) Virus]
(c) Protozoa (d) Bacteria

52. Which of the following food is a ric source of Vitamin B_{12}?
(a) Apple [✓ (b) Fish]
(c) Watermelon (d) Mango

53. Calcium content is maximum in:
(a) Maize (b) Wheat
(c) Bajra (d) Sorghum

54. Which of the following is not contagious disease?
[✓ (a) Typhoid] (b) Hysteria
(c) Measles (d) Influenza

55. The disease generally associated wi nutiritional disorder:
(a) Leprosy [✓ (b) Scurvy]
(c) Bronchitis
(d) None of these

56. Epilepsy is disease of the:
(a) Skin
[✓ (b) Nervous system]
(c) Bones (d) Heart

57. Haemophilia is a hereditary diseas carried by:
(a) Males and expressed by males
[✓ (b) Females and expressed by males]
(c) Females and expressed b females
(d) None of these

58. Lack of proper nutrition results in:
(a) Scurvy (b) Fluorosis
[✓ (c) Anaemia] (d) Diabetes

59. Cow milk is rich source of:
[✓ (a) Vitamin A] (b) Vitamin B
(c) Vitamin C (d) Vitamin D

60. Which of the following is a fungal disease?
(a) Enzyme (b) Ringworm
(c) Elephantiasis (d) Bacteria

61. Amnesia is related to:
(a) Loss of sight

(b) Loss of memory
(c) Loss of hearing
(d) None of these

62. Which of the following is a communicable disease?
(a) Diabetes [✓ (b) Diphtheria]
(c) Cancer (d) Fever

63. Which of the following sweeteners does not provide any energy to:
(a) Glucose (b) Fructose
(c) Maltose (d) Saccharin

64. Typhoid is a disease of:
(a) Liver (b) Lungs
[✓ (c) Intestine] (d) Stomach

65. Which milk contains more fat?
[✓ (a) Cow] (b) Buffalo
(c) Camel [✓ (d) Reindeer]

66. Oranges are rich source of:
(a) Carbohydrates
[✓ (b) Vitamins]
(c) Fats (d) Proteins

67. Sensitivity to pollen is called:
(a) Hay fever
(b) Hypertension
(c) Jaundice
(d) Migraine

68. Palak leaves are rich in:
(a) Vitamin A [✓ (b) Iron]
(c) Carotene (d) Vitamin D

69. The lowest fat percentage is found in the milk of:
(a) Cow (b) Camel
(c) Buffalo (d) Goat

70. Which acid is produced when milk gets sour?
(a) Tartaric acid (b) Lactic acid
(c) Butyric acid (d) Acetic acid

71. Man cannot survive without taking minimum amount of:
(a) Carbohydrates
(b) Fats
[✓ (c) Proteins] (d) Minerals

72. A person with stone in the kidney is advised to avoid?
(a) Lemon (b) Vinegar
[✓ (c) Tomato] (d) Lentils

73. Organic food includes:
(a) Fat (b) Proteins
(c) Vitamins [✓ (d) All of these]

74. Which fruit can diabetic patients eat freely?
(a) Banana [✓ (b) Orange]
(c) Mango (d) Apple

75. Vitamin C is absent in:
(a) Strawberry (b) Apricot
[✓ (c) Date] (d) Apple

76. Honey has the largest percentage of:
(a) Water (b) Starch
[✓ (c) Glucose] (d) Sucrose

77. Which disease is caused by a bacterial genus in milk?
(a) Typhoid (b) Diphtheria
(c) Cholera (d) Dysentery

78. Which disease is not caused by insect bite?
(a) Plague [✓ (b) Arthritis]
(c) Typhus (d) Malaria

79. Ready source of energy available for athletes is:
[✓ (a) Carbohydrates]
(b) Fats
(c) Proteins (d) Vitamins

80. Which vaccine was first discovered?
(a) BCG [✓ (b) Small pox]
(c) Cholera (d) DPT

81. The human body is immune to which disease?
(a) Jaundice (b) Diabetese
(c) Small pox (d) Tuberclosis

82. Which of the following chemicals is used for preserving fruit juice?
(a) Sodium benzoate
(b) Ammonium sulphate
(c) Sodium hydroxide
(d) None of these

83. Which of the following is not a cereal?
(a) Rice (b) Barley

(c) Mustard (d) Maize

84. Seeds can best be preserved in:
(a) Hot and dry condition
(b) Cool and dry condition
(c) Hot and wet condition
(d) Cool and wet condition

85. What is mixed farming?
(a) Cultivating different crops in the same farm
(b) Cultivating crops and keeping livestock in the same farms
(c) Cultivating different varieties of same crop
(d) None of these

86. Which of the following is a mixed fertilizer?
(a) Urea (b) NPK
(c) CAM (d) Sulphate

87. Stem cutting are commonly used for re-growing:
(a) Cotton (b) Banana
[✓ (c) Sugarcane] (d) Mango

88. Citrus fruit products should not be preserved in vessels of:
(a) Tin (b) Copper
(c) Steel (d) Iron

89. Herbicides are used for the elimination of:
(a) Insects (b) Weeds
(c) Pests (d) Ringing

90. The science of vegetable culture is known as:
(a) Arboriculture (b) Horticulture
(c) Apiculture (d) Agriculture

91. Cotton fiber is rooted from:
(a) Seed (b) Stem
(c) Root (d) Leaf

92. What is called the type of medicine in which fine needles are put into the patient's skin and carefully twisted?
(a) Allopathic
(b) Homeopathic
(c) Surgery (d) Acupuncture

93. Which substance in medicine is given to a patient to reduce the feeling of pain?
(a) Anaesthetic (b) Either
(c) Alcohol
(d) None of these

94. Anaesthetic may be injected into a part of the body to deaden the nerves there. What is called this anaesthetic?
(a) General Anaesthetic
(b) Local Anaesthetic
(c) Temporary Anaesthetic
(d) Permanent Anaesthetic

95. Name the technique which allows visualization of blood vessels on x-rays after injection of a radiopaque substance (one that shows up on x-ray)?
(a) Angiography
(b) Angioplasty
(c) Ultrasound (d) By-pass

96. One living organism produces a substance, which kills other living organisms. This substance can often be used to cause diseases in plants or animal, for they kill certain harmful organisms already present in the body of victim and not the victim itself. What this substance is called?
(a) Vaccine (b) Antibiotics
(c) Antiviral (d) Antibodies

97. One of the best-known antibiotics that is used to fight bacteria:
(a) Penicillin (b) Helcilin
(c) Amoxil (d) Wymox

98. Antigen is foreign substance, which is introduced into an organism. What antigen does in the body?
(a) Reduce body resistance
(b) Maximise body resistance
(c) Stimulates production of antibodies that combat the intruder
(d) None of them

99. Which substance kills or prevents the growth of the micro-organisms. It is

especially used to avoid infection from contamination of body surfaces and surgical instruments?

(a) Antigen (b) Antiseptic
(c) Antibiotic (d) Antivirus

100: Commonly used antiseptics and disinfectants include iodine, chlorine, alcohol, isopropanol, formaldehyde, and hydrogen peroxide. Which of the following substances has also antiseptic effects?

(a) Ultraviolet radiation
(b) Heat
(c) Ionizing radiation
(d) All of them

101. What is chemotherapy?

(a) Cure by chemicals
(b) Cure without chemicals
(c)✓ Use of non-antibiotic chemical substance to treat disease (most often cancer)
(d) None of these

102. Name the discipline, which deals with the understanding and treatment of health problems, particularly mental disorders?

(a) Applied Psychology
(b) Clinical psychology
(c) Psychoanalysis
(d) Psychiatry

103. To prevent or cure illness drugs are used in medicine. What are called those drugs, which are made from plants?

(a) Natural drugs
(b) Plant drugs(c) Basic drugs
(d) Herbal drugs

104. In which type of treatment, doctors give patients tiny amount of a drug which causes effects or symptoms similar to those which are being treated?

(a) Chemotherapy
(b) Homeopathy
(c) Acupuncture
(d) None of them

105. Artificially induced state of relaxation in which suggestibility is heightened is called:

(a) Psychoanalysis
(b) Hypnotism (c) Hypnosis
(d) None of these

106. By which process body becomes resistant to a particular disease?

(a) Materialize
(b) Sterilization
(c) Sublimize
(d) Immunization

107. What is called the diseased condition, both in animals and plants, when harmful microorganisms, such as bacteria, enter the tissues of the victim and multiply?

(a) Infection
(b) Multiplication
(c) Becterisation
(d) Vaccination

108. Which technique produces the images of the tissues inside the body and allows the physician to identify abnormal tissue without surgery?

(a) X-rays (b) Ultrasound
(c) Radiation
(d) Magnetic resonance imaging (MRI)

109. In which year the antibiotic, penicillin, was discovered by the Scottish scientist sir Alexander Fleming?

(a) 1926 (b) 1928
(c) 1927 (d) 1929

110. Which of the following is a system of physical treatment for disease or disability?

(a) Chemotherapy
(b) Physic therapy or physical therapy
(c) Radiotherapy
(d) Angiotherapy

111. Using x-rays to produce an image of part of a person's body on a florescent screen is called:
   (a) Radiography
   [✓ (b)] Radiotherapy
   (c) Sonography (d) MRI

112. How is known the treatment of diseases by radiation from x-ray machines of radioactive sources?
   (a) Radiation
   (b) Radiography
   (c) Wave-therapy
   (d) Radiotherapy

113. The transfer of an organ or portion of tissue from one part of body to another or from one person to another is called:
   (a) By pass surgery
   (b) Transplant surgery
   (c) Plantation
   (d) Acute surgery

114. Sometimes the patient's body is not able to work with the transplanted organ. What this phenomenon is called?
   (a) Ejection (b) Allergy
   (c) Rejection
   (d) None of these

115. Name the method of inducing immunity to infectious disease due to bacteria or virus?
   (a) Vaccination
   (b) Virus therapy
   (c) Deracination
   (d) Immunization

==========

Answers

1.	(d)	2.	(a)	3.	(c)	4.	(c)
5.	(a)	6.	(a)	7.	(a)	8.	(c)
9.	(b)	10.	(a)	11.	(b)	12.	(c)
13.	(a)	14.	(d)	15.	(a)	16.	(d)
17.	(d)	18.	(b)	19.	(a)	20.	(c)
21.	(a)	22.	(c)	23.	(b)	24.	(b)
25.	(d)	26.	(b)	27.	(a)	28.	(d)
29.	(a)	30.	(b)	31.	(b)	32.	(c)
33.	(c)	34.	(c)	35.	(c)	36.	(a)
37.	(b)	38.	(c)	39.	(c)	40.	(a)
41.	(a)	42.	(a)	43.	(b)	44.	(b)
45.	(b)	46.	(c)	47.	(b)	48.	(c)
49.	(b)	50.	(b)	51.	(b)	52.	(b)
53.	(a)	54.	(b)	55.	(b)	56.	(b)
57.	(b)	58.	(c)	59.	(a)	60.	(b)
61.	(b)	62.	(b)	63.	(d)	64.	(c)
65.	(d)	66.	(b)	67.	(a)	68.	(b)
69.	(a)	70.	(b)	71.	(c)	72.	(c)
73.	(d)	74.	(b)	75.	(c)	76.	(c)
77.	(c)	78.	(b)	79.	(a)	80.	(b)
81.	(c)	82.	(a)	83.	(c)	84.	(b)
85.	(b)	86.	(b)	87.	(c)	88.	(b)
89.	(b)	90.	(a)	91.	(a)	92.	(d)
93.	(a)	94.	(a)	95.	(a)	96.	(b)
97.	(a)	98.	(c)	99.	(b)	100	(d)
101	(c)	102	(b)	103	(d)	104	(b)
105	(c)	106	(d)	107	(a)	108	(d)
109	(b)	110	(d)	111	(b)	112	(d)
113	(b)	114	(c)	115	(a)		

==========

CLASSIFICATION OF FOOD

1. Proteins: The word protein means necessary for life because vital parts of nucleus and protoplasm of every cell are made of proteins only.

One sixth of the body weight consists of proteins. One third of its is in muscles, one tenth in skin, one fifth in cartilage and bones and remainder in tissues and body fluids.

Protein differs from carbohydrate and fats because it contains 16% nitrogen. Size of molecule of protein is larger.

Amino Acids: Proteins are made up of simpler substances called amino acids. The amino acids contain a basic (amino) and acid (carboxyly) group in their molecules

Functions: The principal functions of protein in the body are as follows:

1. They provide material for growth.
2. They provide energy and stimulate metabolism.
3. They are synthesized to fat.
4. Anti-bodies functions.
5. They maintain acid base balance.

Sources of Proteins: There are two sources of proteins:

(a) Animal sources – eggs, milk, meat, fish etc.
(b) Plant sources – pulses, cereals, nuts, beans, oil seeds etc.

2. Carbohydrates: 70 to 80% of total energy requirement is supplied by carbohydrates.

Carbohydrates contain carbon, hydrogen and oxygen and can be classified as:

(i) Monosaccharide : Glucose
(ii) Disaccharides : Cane or beet sugar (sucrose), milk
(iii) Polysaccharide : Starch, Glycogen, plant gums and mucilage

The main function of carbohydrate is to give energy.

3. Fats: Fats contain carbon, hydrogen and oxygen and are composed of fatty acids.

Sources: Dietary fats are derived from two sources:

(i) **Animal sources:** They are ghee, butter, lard and fish oil. Animal fats in general are poor sources of essential fatty acids but they are good sources of Vitamin A & D.
(ii) **Vegetable Sources:** They include various edible oils such as groundnut, gingelly, mustard, safflower etc.

Vitamins and Minerals

Vitamins: Vitamins are organic substances in food which are required in small amounts, but which cannot be synthesized in adequate amount. They don't yield calories but act as catalysts in various body processes. These have to be supplied from outside, 12 vitamins have so far been demonstrated to have clinical effect in man.

These are:

Fat-soluble:

Vitamin – A
Vitamin – D
Vitamin – E
Vitamin – K

Water-soluble

Vitamin C – Ascorbic Acid

Vitamin B Complex
Thiamin (B_1)
Niacin
Riboflavia
pyridoxin (B_6)
biotin Cobalamine (B_{12}) Floate

Each of the above vitamins has a

specific function to perform and deficiency of particular vitamin leads to specific deficiency disease. Minimum requirement of each vitamin has been determined to keep the body healthy.

Factors Influencing the Utilization of Vitamin

Availability: Fat soluble vitamins may be in deficiency of sufficient dietary fat is not consumed or absorbed. In case of certain vitamins only a portion is being absorbed.

Vitamin – A

Even though vitamin 'A' was not discovered until 1913 Cod Liver has been used for centuries. Even in the days of the Greeks and Romans, night, eating liver alleviated blindness. Mc Collum and Davis at John Hopkins University in America discovered the vitamin, when they isolated a growth factor in egg yolk and butter. It was chemically synthesized for the first time in 1930.

Functions: The known functions of vitamin 'A' are:

- (i) It is essential for skeletal growth
- (ii) It is anti-infective by protecting body from microbes
- (iii) It plays role in immunological defence mechanism of the body
- (iv) It plays a crucial role in normal vision.

Deficiency: Night Blindness.

Vitamin – D

Vitamin 'D' is intimately connected with he metabolism of calcium and phosphorus. It promotes the absorption of calcium from the intestines and helps in mineralization of bone.

Vitamin 'D' is found in small quantities and in few animal foods. Foods of plant origin don't contain vitamin 'D'.

Deficiency – Rickets

Vitamin – E

Vitamin 'E' was first isolated from wheat germ oil in 1936 although its existence was first suspected in 1920 and in 1922 the substance was proved essential for normal reproduction.

Vitamin 'E' is chemically being identified as tocopherol. It is widely distributed in food. Foods rich in polyunsaturated fatty acids are often rich in vitamin 'E'. Vegetable oils, wheat germ oil and egg, yolk are particularly rich in vitamin 'E'.

Vitamin – K

Coagulation or clotting of blood appears to be vitamin K's sole function and in cases of deficiency, haemorrhage occurs.

Vitamin – B Complex

Vitamin 'B' was at first thought to be one single vitamin and as such was identified by the Polish Chemist Casimi Funk in 1911. He extracted from rice polishing a crystalline substance which was capable of curing beri beri and it was to this substance that he gave the name of vitamin from the Latin 'Vita' meaning life and 'Amine' meaning containing basic or 'Amine nitrogen'.

Functions: It is essential for the utilization of carbohydrate in the body. Deficiency of it causes accumulation of pyruvic and lactic acid in the tissues and body fluids.

Vitamin – C

In olden days sailors to whom fresh fruits and vegetables were not available for many days during long voyage at sea developed this disease. It is reported that 100 out of the 180 men who sailed with Vasco-De-Gama died of scurvy before they reached India in 1498. Ascorbic acid is a white, crystalline, odourless compound readily soluble in water. It is a strong reducing agent. It is comparatively stable in an acid medium but is destroyed by the action of heat and catalysts such as copper.

Smoking destroys vitamin 'C' and it has been claimed that each cigarette smoked uses up to 25 mg Vit 'C' i.e. the equivalent of one orange. Any kind of stress whether it be an argument, extremes of temperature, fatigue of illness, also depletes Vitamin 'C'

Functions:

1. It performs a number of important functions in the body.
2. It is part of the cementing material, which holds the body cells in place.
3. It helps the body to build resistance to infection. It also helps in the absorption of calcium and iron.
4. Deficiency of vitamin 'C' may result in delayed healing of wound and infection including common cold.

Sources

Animal food is a poor source of Vitamin 'C'. Amla is one of the richest sources of vitamin 'C'. Citrus fruits such as lemon and oranges are good source of it.

Mineral Elements

Body contains about 24 minerals. About 4 to 6% of body weight is made of mineral elements. The largest concentration of minerals is found in bones and teeth.

Some mineral play an important role in the regulation of body functions such as:

1. Maintenance of acid base balance.
2. Control of water balance.
3. Contraction of muscles
4. Clotting of blood
5. Formation of bones and teeth etc.

Minerals don't act singly in the regulation of body processes but work with the help of other minerals and organic compounds.

MCQs

Write the correct answer:

1. What do you call milk that has been deliberately thickened and fermented by the introduction of Lactobacillus bulgaricus?
   (a) Double cream
   (b) Yogurt
   (c) Pasteurized
   (d) Skimmed milk
2. Which vitamin is formed by the action of sunlight on the skin?
   (a) Vitamin B (b) Vitamin A
   (c) Vitamin C (d) Vitamin D
3. Vitamin B_2 is also known as:
   (a) Riboflavin (b) Calcium
   (c) Calcium (d) Thiamine
4. The protein content of edible portion of eggs is:
   (a) 13.3 % (b) 14.3 %
   (c) 15.3% (d) 160.3%
5. Guava is the richest source of:
   (a) Vitamin A
   (b) Carbohydrates
   (c) Minerals
   (d) None of these
6. Which mineral nutrients are required in large quantities by human beings?
   (a) Phosphorus and calcium
   (b) Sodium and Magnesium
   (c) Both (a) & (b)
   (d) None of these
7. Name the ready source of energy available for athletes?
   (a) Carbohydrates
   (b) Fats
   (c) Minerals (d) Vitamins
8. Which of the following has been found useful in keeping cholesterol level down?
   (a) Vitamin A (b) Tulsi
   (c) Saliva (d) Cheese
9. Carrot is the rich source of:
   (a) Vitamin A (b) Vitamin B
   (c) Vitamin C (d) Vitamin D
10. How much protein is recommended for a moderately active woman daily?
    (a) 30g (b) 35g
    (c) 41g (d) 46g
11. Water is the largest inorganic component of human food. Name the largest organic component of human body?
    (a) Protein (b) Fats

(c) Carbohydrates
(d) Vitamins

12. What of the following is true regarding excess of Carbohydrates in human body?
(a) They are stored as glycogen or converted to fat
(b) They are stored in liver and muscle and in fat cells beneath the skin
(c) Both (a) & (b)
(d) None of these

13. Select the correct statement?
(a) Fruits and vegetables are 80 to 95 percent water
(b) The human body is 65 percent water
(c) Meats are made up of 50 percent water
(d) All above

14. Which part of our food is responsible to build body tissue and to synthesize enzymes, some hormones such as insulin that regulate communication among organs and cells, and other complex substances that govern body processes?
(a) Carbohydrates
(b) Fats (c) Protein
(d) None of them

15. A deficiency of zinc:
(a) Impair growth
(b) Cause dwarfism
(c) Both (a) & (b)
(d) None of them

16. In which part of our body Fluorine is retained?
(a) Teeth (b) Bones
(c) Both (a) & (b)
(d) Not (a) nor (b)

17. Which of the following statement is correct?
(a) Milk is rich in vitamins but contains no iron
(b) Pasteurized Milk has no vitamin C
(c) In adults, too much milk can cause unsaturated fatty acids to build in the blood system
(d) All above

18. Mention the food in which Sodium, cobalt, chloride, copper, magnesium, manganese, phosphorus, and potassium are present?
(a) Milk (b) Pulses
(c) Vegetables (d) Fruits

19. How many people worldwide suffer from iodine-deficiency diseases?
(a) 50 million (b) 10 million
(c) 150 million (d) 110 million

20. Deficiency of following vitamin decrease haemoglobin production:
(a) Biotin (b) Thiamine
(c) Niacin (d) Pyridoxine

21. Metanil yellow, a dye added in dal is tested using:
(a) Sulphuric acid
(b) Hydrochloric acid
(c) Nitric acid
(d) Acetic acid

22. The oil commonly used as an adulterant in cooking oil is:
(a) Linseed oil
(b) Sesame oil
(c) Argemone oil
(d) All of the above

23. The instrument used to measure the density of milk to check the presence of water in milk is called
(a) Anemometer
(b) Lactometer
(c) Barometer
(d) Hydrometer

24. The institutions settled by the government to check and prevent food adulteration is:
(a) Bureau of the Indian Standards
(b) The Agmark Standards
(c) Codex Alimentarius
(d) All of the above

25. One of the main adulterant used in chilli powder:

(a) Red brick powder
(b) Fine saw dust
(c) Both (a) and (b)
(d) Neither (a) nor (b)

26. The chemical commonly used to disinfect drinking water is:
(a) Bleaching powder
(b) Chlorine
(c) Hypo-chlorite
(d) All of the above

27. A person who happened to suffer third degree burns should be given a die which is rich in:
(a) Protein and vitamins
(b) Starch (c). Lipids
(d) Cholesterol

28. When fruits or vegetables are frozen for storage purposes, the nutritive value:
(a) Increases (b) Decreases
(c) Remain same
(d) Both (a) and (c)

29. The overcooking of food should be avoided because overcooking:
(a) Makes the food difficult to digest
(b) Reduces the nutritive value of food
(c) Increases the nutritive value of food
(d) Makes the food toxic

30.
(a) Liver cancer
(b) Lung cancer
(c) Kidney cancer
(d) Throat cancer

31. The pork meat should be cooked well as it may contain:
(a) Tape worm (b) Round worm
(c) Thread worm
(d) Both (a) and (b)

32. The excessive presence of lead in drinking water causes:
(a) Liver cancer
(b) Lung cancer
(c) Kidney cancer
(d) Throat cancer

33. The sodium salt which is used as a food preservative is:
(a) Sodium nitrate
(b) Sodium thiosulphate
(c) Sodium benzoate
(d) All of the above

34. The commonly used method of preserving perishable food items is:
(a) Freezing (b) Pickling
(c) Dehydration
(d) All of the above

35. The smoking is process used to preserve the:
(a) Meat and their products
(b) Fish and their products
(c) Both (a) and (b)
(d) Neither (a) nor (b)

36. The gas used in packets of chips is:
(a) Carbon dioxide
(b) Nitrogen (c) Oxygen
(d) Argon

37. The fizzy drinks contain
(a) Carbon dioxide
(b) Nitrogen
(c) Oxygen (d) Arqon

38. Vitamins C and B complex are called:
(a) Basic vitamins
(b) Fat-soluble vitamins
(c) Primary vitamins
[✓ (d)] Water-soluble vitamins

39. Which of these spoils the food, the most?
(a) Mould (b) Yeast
(c) Both mould and yeast
(d) Mushroom

40. The foods with very high-energy source are:
(a) Carbohydrates
(b) Fats
(c) Proteins (d) Minerals

41. The foods called protective food are:
(a) Carbohydrates and fats
(b) Fats and proteins
(c) Minerals and vitamins
(d) Proteins and minerals

42. Food is normally cooked to:
(a) Make it tastier
(b) Easily digestible
(c) To kill harmful germs
(d) All of the above

43. A farmer needs to plough his field:
(a) To aerate the soil
(b) To loosen soil for easy root growth
(c) To overturn the soil
(d) All of the above

44. The rodenticides are applied for storing cereals to protect it from
(a) Insects (b) Rats
(c) Cat (d) Dogs

45. The chemical compound commonly used to preserve the fruit juices is:
(a) Potassium met bisulphite
(b) Sodium benzoate
(c) Both (a) and (b)
(d) Neither (a) nor (b)

46. It is important to remove the weeds from a field because they compete with plants for:
(a) Carbon dioxide
(b) Water (c) Sunlight
(d) All of the above

47. The most effective method of pest control is:
(a) Chemical method
(b) Mechanical method
(c) Biological method
(d) Both (a) and (b)

48. It is necessary to preserve the food
(a) To extend the life of food
(b) To make more appetizing without much loss in the nutritive without
(c) To mix it with chemicals which are healthy for growth
(d) Both (a) & (b)

49. Which of the following method is used for preserving the food?
(a) Salting (b) Smoking
(c) Canning
(d) All of the above

50. Out of the plants given below. the one with lowest food value is:
(a) Soybean (b) Banana
(c) Rice (d) Groundnut

51. The plants utilize nitrogen in form of:
(a) Ammonia (b) Nitrate
(c) Nitrite
(d) Free nitrogen

52. In green plants, the common symptom of deficiency of calcium and magnesium is:
(a) Bending of leaf tips in form of hooks
(b) Appearance of dead necrotic patches on leaves
(c) Formation of anthocyanin pigment in excess
(d) Poor development of vascular bundles in stem

53. Night blindness is caused by deficiency of:
(a) Vitamin D (b) Vitamin A
(c) Vitamin B (d) Vitamin C

54. Pernicious anemia is caused by deficiency of vitamin:
(a) C (b) B_6
(c) B_2 (d) B_1

55. Most important property of water for which it is needed in the body is:
(a) It cools the body
(b) Its is used in cellular metabolism
(c) It is a universal solvent
(d) It is tasteless, colourless, and odourless

56. Which is not a function of HCl in stomach?
(a) Softening fibrous food elements
(b) Promoting formation of pepsin
(c) Killing bacteria ingested with food and drinks
(d) Breaking down proteins into peptones

57. Pellagra is caused due to prolonged deficiency of:
(a) Folic acid (b) Niacin

(c) Ascrobic acid
(d) Thiamine

58. The hardest substance in vertebrate body is:
(a) Chondrin (b) Dentine
(c) Keratin (d) Enamel

59. Deamination occurs in liver to:
(a) Convert proteins to urea and uric acid
(b) Get rid of urea from blood
(c) Synthesize amino acids
(d) Make use of excess amino acids

60. Milk protein is:
(a) Globulin (b) Albumin
(c) Hyosin (d) Casein

61. Trypsin differs from pepsin in that:
(a) It digest proteins in alkaline medium and not in acid medium
(b) It digests protein in acidic medium and not in alkaline medium
(c) Both (a) & (b)
(d) None of these

62. Milk, eggs and meat are good source of:
(a) Carbohydrate (b) Vitamins
(c) Fats [✓ (d) Proteins]

63. Digestion of carbohydrates is affected by:
(a) Pepsin (b) Erepsin
(c) Steapsin (d) Amylopsin

64. Prolonged deficiency of vitamin B_1 in human diet may lead to:
(a) Cheilosis (b) Scurvy
(c) Beriberi
(d) Night-blindness

65. The Intestine in human body is about 29 feet long, because:
(a) More length increases food digestion and absorption
(b) Bacteria contained in food may gradually be killed
(c) It provides more area for food storage
(d) None of these

66. Liver cells secrete:
(a) HCl
(b) Succus entericus
(c) Digestive enzymes
(d) Bile and no enzymes

67. Ptyalin is secreted by:
(a) Salivary glands
(b) Prostate glands
(c) Stomach (d) Pancreas

68. Oxyntic cells are located in:
(a) Kidneys and secrete rennin
(b) Gastric glands and secrete HCl
(c) Gastric epithelium and secrete pepsin
(d) Islets of langerhans and secrete glucagons

69. Taking in the body by an animal is called:
(a) Ingestion (b) Absorption
(c) Assimilation (d) Egestion

70. Muscular contractions of stomach are known as:
(a) Circulation (b) Aigestion
(c) Peristalsis (d) Absorption

71. Bile Juice assists in digestion of fats by:
(a) Increasing the alkalinity of digestive medium
(b) Contributing a lipolytic enzyme
(c) Stimulating secretion of a lipase
(d) Emulsifying the fats.

72. Cellulose digestion in rabbit, cows and other herbivorous mammals with the help of Bacteria occurs in:
(a) Villi of intestine
(b) Vermiform appendix
(c) Pyloric caeca
(d) Vermiform appendix and caecum

73. Beriberi is caused due to deficiency of vitamin:
(a) C [✓ (b) B_1]
(c) B_2 (d) Bs

74. The largest gland in human body is:
(a) Pancreas [✓ (b) Liver]
(c) Pituitary (d) Thyroid

75. The mammalian liver, in its

microscopic structure, is characterized by presence of:

(a) Glisson's capsules and kupffer cells
(b) Leucocytes and canaliculi
(c) Glisson's capsules and leucocytes
(d) Kupffer cells and leucocytes

76. Micronutrients:

(a) Are less Important in nutrition than macronutrients
(b) Are as Important In nutrition as macronutrients
(c) May be omitted from culture media without any detrimental effects on plants
(d) Are called micro because they play only a minor role in nutrition

77. Substrate of amylase enzyme is:

(a) Starch (b) Protein
(c) Fat (d) Cane sugar

78. Rumen of cow is a part of it's:

(a) Intestine (b) Stomach
(c) Caecum (d) Rectum

79. Which one of these is most essential for body growth and formation of new cells?

(a) Fats (b) Sugars
(c) Minerals (d) Proteins

80. Saprophytes:

(a) Can absorb liquefied food direct dead matter
(b) Cannot synthesize their own protoplasm
(c) Cannot synthesize any complex food
(d) Need help of enzymes for absorption

81. Digestion of carbohydrates is affected by:

(a) Pepsin (b) Erepsin
(c) Steapsin (d) Amylopsin

82. Including proteins, fats and vitamins, which of the following is/are among the major groups of nutrients?

(a) Carbohydrates
(b) Minerals
(c) Both (a) & (b)
(d) None of them

83. Which nutrient's primary function is to build body tissues and to synthesize enzymes, some hormones, and other complex substances that govern body functions?

(a) Protein
(b) Carbohydrates
(c) Fats (d) Minerals

84. Of the 20 amino acids that make up Protein, how many are considered essential because the body cannot synthesize them?

(a) 6 (b) 8
(c) 7 (d) 9

85. Inorganic mineral nutrients are required to build body tissues and clotting of blood. In which of the following function(s) they also participate?

(a) Nerve reactions
(b) The contraction of muscles
(c) In the action of enzyme systems
(d) All of them

86. Mineral nutrients are divided into two classes; major elements include calcium, phosphorus, magnesium, iron, iodine, and potassium. Which class includes copper, cobalt, manganese, fluorine and zinc?

(a) Minor Elements
(b) Small Elements
(c) Trace Elements
(d) Non Essential Elements

87. Vitamins are denoted by letters and are often divided into fat-soluble and water soluble kinds. Water-soluble vitamins pass out of the body through urine. Which of the following vitamin(s) are/is water-soluble?

(a) B (b) C
(c) Both (a) & (b)
(d) None of them

88. Fat soluble vitamins can be stored in the body's fats. Pick out fat-soluble vitamins?
(a) A, D (b) E, K
(c) Both (a) & (b)
(d) None of them

89. Why vitamin A or also called retinal is essential?
(a) Healthy epithelia tissue
(b) Skeletal growth
(c) Eyesight (d) All of them

90. Vitamin A is found in the milk, butter and egg yolks. Green leafy or yellow vegetables contain a substance which the body converts to vitamin A. Name the substance?
(a) Carotene (b) Calcium
(c) Cadmium (d) Calciferol

91. Which vitamin is found in human skin and activated with the exposure of skin to sunlight?
(a) Vitamin A (b) Vitamin D
(c) Vitamin C (d) Vitamin K

92. Vitamin D is a crucial factor in calcium metabolism, especially the growth and maintenance of bone. Mention its other name?
(a) Retinal (b) Calciferol
(c) Calcan
(d) Calcium Vitamin

93. Deficiency of vitamin D can cause rickets or bowlegs, what can be caused by the overdose of this vitamin?
(a) Kidney damage
(b) Liver damage
(c) Lungs damage
(d) Heart damage

94. In which Vitamin E is found?
(a) Peanuts
(b) Vegetable Oils, Wheat germ
(c) Green Leafy Vegetables
(d) All of these

95. For what vitamin K provides essential cofactors?
(a) For production of white blood cells
(b) Production of Red blood cells
(c) Production of blood
(d) Production of certain clotting factors in the liver

96. Vitamin B_1 or thiamine occurs naturally in whole grains, yeasts and nuts. What is its function?
(a) Bone formation
(b) Meat formation
(c) Acts as a coenzyme in carbohydrate metabolism
(d) Helps digestion

97. Which vitamin's deficiency in the body causes the disease beriberi?
(a) B_1 (b) C
(c) A (d) O

98. Mention the vitamin that is also a coenzyme, and its deficiency causes lesions of skin, mouth or eyes?
(a) 81 (b) C
(c) B_2 or riboflavin
(d) K

99. B_{12} or cyano-coblamin is essential for all body's cells and its deficiency can cause Pernicious anemia. It occurs naturally in bivalves and fish, eggs and lean meat. Who are at risk of it deficiency?
(a) Rigorous vegetarians
(b) Miners (c) Old people
(d) Children

100. Which vitamin plays an important role in the healing process, blood cell formation, and in bone and tissue growth?
(a) Vitamin D (b) Vitamin A
(c) Vitamin E
(d) Vitamin C or ascorbic

101. Vitamin C occurs naturally in citrus fruits, cabbage, berries, pepper and tomatoes. Which disease vitamin C's deficiency causes?
(a) Blindness (b) Scurvy
(c) Cancer (d) Leukemia

102. Which vitamin is also called

Calciferol?
(a) Vitamin (b) Vitamin A
(c) Vitamin K (d) Vitamin D

103. Carbohydrates, found in unrefined grains, tubers, vegetables and Fruit, provide a great part of the energy in most human diets. Although carbohydrates are needed for the body's energy, why they are not considered essential?
(a) Protein can be converted for this purpose
(b) Protein Fats be converted for this purpose
(c) Vitamin D be converted for this purpose
(d) None of these

104. Which nutrient, although scarcer than carbohydrates, provide more than twice energy as compared to carbohydrates?
(a) Minerals (b) Fats
(c) Both of them
(d) None of them

105. One gram of carbohydrates gives approximately 4 calories. If consumed in excess then:
(a) These are released with urine
(b) These converted into fat and stored in the body
(c) These are stored in the liver
(d) These are stored in the bones

106. Why children require more proteins than adults?
(a) Intake of proteins in children is larger for building strong bones and muscles to create resistance against infections
(b) To fight against disease
(c) Both (a) & (b)
(d) None of them

107. The stagnant pools are breeding ground of mosquitoes, which are carriers of malaria. The larva of mosquitoes grows up in the water and they have come to the surface in order to breath. Which oil's spray on the water provides a thin coating, which helps to eradicate malaria, to prevent larvae to come up to?
(a) Motor Oil (b) Mobile
(c) Machine Oil
(d) Kerosene Oil

108. How much blood does a normal person have in his body?
(a) About 4 to 5 litres
(b) About 3 to 4 litres
(c) About 2 to 3 litres
(d) About 6 to 7 litres

109. Explain the medical term elephantiasis?
(a) Swelling of hands
(b) Swelling of leg or swollen leg
(c) Swelling of Eyes
(d) Swelling of foot

110. What is called a time during which an organism is present in the body before causing disease?'
(a) Rest period
(b) Incubation period
(c) Sleeping period
(d) Incubation time

111. Diseases caused by the introduction of germs or virus in human body are called:
(a) Infections diseases
(b) Viral diseases
(c) Both of them
(d) None of them

112. In which process the dead germs of another disease in suspension called vaccine in the skin of a man is introduced?
(a) Deracination
(b) Sublimation
(c) Presentation
(d) Vaccination

113. The process of introduction of the germs of the same disease below the skin to produce the disease in mild form and thus give immunity from a severe attack of same disease is

called:
(a) Immunization
(b) Vaccination
(c) Inoculation
(d) None of them

114. What average time is needed for blood clotting?
(a) 2 minutes (b) 4 minutes
(c) 3 minutes (d) 5 minutes

115. Which of the following is the rich source of iron?
(a) Green Vegetables
(b) Soya bean
(c) Both (a) & (b)
(d) None of them

116. Name the substance in stomach that is necessary for easy digestion of Proteins?
(a) Bile juice
(b) Sulphuric acid
(c) Hydrochloric Acid
(d) None of these

117. Which of these drinks would normally be lowest in sugar content?
(a) Low-calorie squash
(b) High-juice squash
(c) Fruit-flavoured drink
(d) Skimmed milk

118. Which type of milk is generally lowest in fat?
(a) Full cream (b) Powdered
(c) Dried (d) Skimmed

119. Herbivorous animals can digest cellulose because:
(a) Their molar and premolar teeth can crush and grind the food
(b) Bacteria present in their caecum help in digestion of cellulose
(c) Gastric juice has a digestive enzyme for cellulose digestion.
(d) Alimentary canal is very long

120. Bilirubin and biliverdin are found in:
(a) Blood (b) Bile
(c) Pancreatic juice
(d) Saliva

121. Trypsin converts:
(a) Fats into fatty acids
(b) Starch and glycogen into maltose
(c) Proteins into peptones
(d) Sucrose into glucose and fructose

122. Scurvy is a disease caused by:
(a) Presence of Rh antigen in blood
(b) Deficiency of vitamin E
(c) A virus
[✓ (d)] Deficiency of ascorbic acid or vitamin C

123. Islets of Langerhans are:
(a) Modified lymph glands
(b) Ductless glands in pancreas.
(c) Specialized areas in pituitary
(d) Small tubules in kidneys

124. Vitamin A is also known as:
(a) Retinal (b) Thiamine
(c) Riboflavin (d) Pyridoxine

125. Vitamin BI is also known as:
(a) Pyridoxine (b) Tocopherol
[✓ (c)] Riboflavin (d) Thiamine

126. Vitamin E is also known as:
(a) Calciferol (b Axerophrol
(c) Ascorbic acid
[✓ (d)] Tocopherol

127. Vitamins are important:
(a) For growth of body
(b) For preparation of new tissues
(c) It increase the immunity against diseases
[✓ (d)] All of above

128. Which carbohydrate is an essential constituent of plant cells?
(a) Cellulose (b) Maltose
(c) Sucrose (d) Starch

129. For good health it is essential that our food must contain the following substances except:
(a) Carbohydrates
(b) Proteins
(c) Oils and fats
(d) Sodium chloride

130. Organic compounds of extraordinary high physiological potency, which are

essential in small amounts for the all being of all animal organisms, are:
(a) Proteins (b) Enzymes
(c) Vitamins (d) Mineral salts

131. Which of the following vitamins are not soluble in Fat?
(a) A (b) B
(c) D (d) E

132. Water soluble vitamins are:
(a) B (b) A
(c) D (d) All

133. Into how many groups, nutrients can be divided?
(a) 7 (b) 5
(c) 6 (d) 8

134. Vitamins A, D, E, and K are called:
(a) Water-soluble vitamins
(b) Primary vitamins
(c) Basic vitamins
(d) Fat-soluble vitamins

135. The type of sugar present in milk is:
(a) Lactose (b) Maltose
(c) Galactose (d) Sucrose

136. The balanced diet of a person depends on his:
(a) Age (b) Sex
(c) Profession
(d) All of the above

137. In carnivores the colour of bile juice is golden yellow because of presence of billirubin while in herbivores; the colour is green because of the presence of:
(a) Sodium glycholate
(b) Cholesterol
(c) Biliverdin
(d) Lecithin

138. The common adulteration in cereals like rice is:
(a) Sandstone (b) Girt
(c) Mud
(d) All of the above

139. Gloves are obtained from:
(a) Fruit (b) Leaf
(c) Root
(d) Dried flower bud

140. The synthesis of enzymes in a cell is controlled by:
(a) Nuclear genes
(b) Ribosomes
(c) Golgi apparatus
(d) Nucleolar genes

Answers

1.	(b)	2.	(d)	3.	(d)	4.	(a)
5.	(b)	6.	(c)	7.	(c)	8.	(c)
9.	(b)	10.	(b)	11.	(a)	12.	(c)
13.	(d)	14.	(c)	15.	(c)	16.	(c)
17.	(d)	18.	(c)	19.	(c)	20.	(d)
21.	(b)	22.	(c)	23.	(b)	24.	(d)
25.	(c)	26.	(d)	27.	(a)	28.	(c)
29.	(b)	30.	(a)	31.	(d)	32.	(c)
33.	(c)	34.	(d)	35.	(c)	36.	(b)
37.	(a)	38.	(d)	39.	(c)	40.	(b)
41.	(b)	42.	(d)	43.	(d)	44.	(b)
45.	(c)	46.	(d)	47.	(c)	48.	(d)
49.	(b)	50.	(b)	51.	(b)	52.	(c)
53.	(b)	54.	(c)	55.	(c)	56.	(b)
57.	(b)	58.	(d)	59.	(b)	60.	(d)
61.	(a)	62.	(d)	63.	(d)	64.	(c)
65.	(a)	66.	(d)	67.	(a)	68.	(b)
69.	(a)	70.	(d)	71.	(b)	72.	(d)
73.	(b)	74.	(b)	75.	(a)	76.	(b)
77.	(a)	78.	(b)	79.	(d)	80.	(d)
81.	(d)	82.	(a)	83.	(a)	84.	(b)
85.	(d)	86.	(c)	87.	(c)	88.	(c)
89.	(d)	90.	(a)	91.	(b)	92.	(b)
93.	(a)	94.	(d)	95.	(d)	96.	(c)
97.	(a)	98.	(c)	99.	(c)	100	(d)
101	(b)	102	(d)	103	(a)	104	(c)
105	(b)	106	(c)	107	(d)	108	(a)
109	(b)	110	(b)	111	(c)	112	(d)
113	(c)	114	(b)	115	(c)	116	(c)
117	(a)	118	(b)	119	(b)	120	(b)
121	(d)	122	(b)	123	(b)	124	(d)
125	(d)	126	(d)	127	(d)	128	(d)
129	(c)	130	(c)	131	(b)	132	(a)
133	(b)	134	(d)	135	(a)	136	(d)
137	(c)	138	(d)	139	(d)	140	(a)

==========

DISEASES AND CURE

Write the correct answer:

1. When the demand for oxygen by the heart muscle exceeds the ability of the coronary vessels to supply oxygen, due to blockage or narrowing of the vessels, then which disease occurs?
(a) Heart Attack
(b) Cirrhosis (c) Anthrax
(d) Angina Pectoris

2. Name the infectious disease that affects livestock and more rarely, humans, causing pimples and lung damage?
(a) Acne
(b) Mouth and Head
(c) Anthrax
(d) Danger fever

3. What is Arthritis?
(a) Inflammation of the joints
(b) Weakness of the joints
(c) Weakness of the bones
(d) Inflammation of the bones

4. In which form of disease the body's immune system starts to react against its own synovial tissue and damages it?
(a) Cancer
(b) Inflammatory Arthritis
(c) Rheumatoid Arthritis
(d) Arthritis

5. Pick out the characteristic of the chronic condition, Asthma?
(a) Difficulty in breathing due to spasm of the bronchi in the lungs
(b) Difficult breathing with fever
(c) Difficult breathing with allergy
(d) All of them

6. How can the attack of Asthma be provoked?
(a) By infection
(b) By allergy
(c) By stress (d) All of these

7. Which of the following is the inflammation of the bronchi (air passages) of lungs that is usually caused initially by a viral infection, such as cold or flu?
(a) Whooping cough
(b) Chicken pox
(c) Bronchitis (d) Gastritis

8. What is caused by the inflammation of the nerves all over the body in hot climates?
(a) Allergy (b) Beri Beri
(c) Diphtheria (d) Gangrene

9. Cancer is a group of diseases. What is its characteristic?
(a) Abnormal proliferation of cells
(b) Abnormal proliferation of tumours
(c) Abnormal reduction of White blood cells
(d) Abnormal proliferation of Red blood cells

10. Name the eye disease in which the crystalline lens or its capsule became cloudy, causing blindness?
(a) Cataract (b) Neurosis
(c) Myopia (d) Shingles

11. To protect from which disease Triple antigen vaccine is given to children?
(a) Polio (b) T.B.
(c) B.P.
(d) Whooping cough

12. Which of the following disease is hereditary disease?
(a) Haemophilla
(b) Cancer
(d) Diabetes (d) Deafness

13. For which organ's correction treatment Dialysis is used?
(a) Heart (b) Stomach
(c) Brain (d) Kidneys

14. What do calories measure?
(a) Heat (b) Weight
(c) Temperature
(d) None of these

15. What is the function of Platelets?
(a) Carry blood
(b) Carry haemoglobin
(c) Carry oxygen
(d) Carry carbon dioxide

16. In the absence of which gland heterozygous normal?
(a) Pituitary gland
(b) Thymus glands
(c) Thyroid glands
(d) None of these

17. With the presence of which element urine becomes yellow?
(a) Urochrome (b) Enzymes
(c) Cholesterol
(d) Carbohydrates

18. According to a scientific research the oldest known human disease is:
(a) Plague (b) Cholera
(c) Tuberculosis
(d) Leprosy

19. What is the chance of the diabetic baby born to parents both heterozygous normal?
(a) Zero (b) 1/4
(c) 1/2 (d) 3/4

20. Which form of drug abusers involves most risk of infection with the HIV (AIDS) virus:
(a) Cigarette smoking
(b) Using alcohol
(c) Injection of heroine
(d) Taking too much aspirin

21. Which disease is caused by a virus of the herpes group and transmitted by airborne droplets, whose incubation period is two to three weeks. It attacks on children and one attack normally gives immunity for life?
(a) Herpes (b) Mumps
(c) Chickenpox or Varicella
(d) Polio

22. In which disease of eye the crystalline lens or its capsule becomes cloudy, causing blindness?
(a) Myopia (b) Cataract
(c) Colour blindness
(d) Dementia

23. Cholera is a disease caused by infection with various strains of the bacillus vibrio chlerae that is transmitted in contaminated water. What is its characteristic(s)?
(a) Severe diarrhea
(b) Vomiting
(c) Both (a) & (b)
(d) None of them

24. Cirrhosis is any degenerative disease, characterized by excessive development of connective tissue, which causes scaring and painful swelling. Which organ becomes the victim of cirrhosis?
(a) Heart (b) Liver
(c) Stomach (d) Brain

25. Colour blindness is the inability to tell colours apart. What is the cause of colour blindness?
(a) Unknown
(b) Disorder of the cones in the retina of the eye
(c) Disorder of the retina
(d) Weakness of the cones

26. Colour blindness is usually found in males. Total colour blindness, which is rare, causes a person to see only black, white and various shades of grey. Which of the following is the most common form of colour blindness?
(a) Difficulty in distinguishing red from green
(b) Difficulty in distinguishing red from blue
(c) Difficulty in distinguishing red from orange
(d) Difficulty in distinguishing blue from black

27. There is an unconscious condition in which a person is unresponsive to external stimuli. What this condition is called?

(a) Unconsciousness
(b) Dementia (c) Coma
(d) Fatigue

28. Which heart disease does affect one person in 200, whose most common conditions include abnormalities of valves, narrowing of the aorta, shunt lesion or the tetralogy of fallout?
(a) Heart attack
(b) Congenital cardiovascular disease
(c) Angina Pectoris
(d) Rheumatic Heart Disease

29. Name the disease in irregular and insufficient action of bowels?
(a) Diarrhea
(b) Constipation
(c) Dysentery
(d) None of these

30. The coronary arteries supply blood to the heart muscle. If the lining of these arteries becomes gradually thickened by fatty tissue, the blood supply decreases. Which disease occurs when blood supply decreases?
(a) Coronary Heart Disease
(b) Heart attack
(c) Heart failure
(d) Congenital cardiovascular disease

31. Coronary Heart disease causes episodes of chest pain often brought on by exercise. Which is the main factor(s) that put an individual at risk of this disease?
(a) Cigarette smoking
(b) High blood pressure
(c) High level of cholesterol in the blood
(d) All of these

32. What is Dementia?
(a) Tumour in the brain
(b) Weakness of brain cells
(c) Mental deterioration as a result of physical change in the brain
(d) Death of neurons

33. Which of the following is a progressive loss of mental faculty and is typically a disease process of old age accompanied by depression?
(a) Permanent dementia
(b) Senile dementia
(c) 80 old age dementia
(d) Acute dementia

34. Which fever is an infectious disease, characterized by sudden start of headache; fever, prostration, severe joint and muscle pain and swollen glands?
(a) Malaria (b) Hay fever
(c) Dengue or Break bone
(d) Tropical fever

35. What is the cause of Dengue?
(a) Virus transmitted by the mosquito
(b) Bacteria transmitted by the mosquito
(c) Poison injected by the mosquito
(d) It is airborne infectious disease

36. Name the emotional state characterized by sadness, unhappy thoughts, apathy, and dejection?
(a) Phobia (b) Stroke
(c) Depression (d) Shingle

37. In which disease antidepressants cognitive therapy and electro convulsive therapy, in which electrical current is passed through the brain, are used?
(a) Phobia (b) Stroke
(c) Shingle (d) Depression

38. Mention the disease in which a disorder of the islets of Langerhans in the pancreas prevents the body producing hormone insulin, so that sugars cannot be used properly?
(a) Cirrhosis (b) Beri Beri
(c) Alzheimer's disease
(d) Diabetes or diabetes mellitus

39. Excessive action of bowels so that the faeces are liquid or semi liquid is called:

(a) Constipation
(b) Dysentery (c) Diarrhoea
(d) None of them

40. Diphtheria is an acute infectious disease in which a membrane forms in the throat along with the production of a powerful toxin that damages the heart and organ. Which organism is responsible for it?
(a) Bacteria (b) Virus
(c) Bacterium (corynebacterium diphtheria)
(d) None of them

41. Dysentery is the infection of the large intestine. What is the result of dysentery?
(a) Diarrhea with blood
(b) Abdomen cramp
(c) Abdominal cramp and painful diarrhea with blood
(d) Loose faeces

42. Among the two kinds of dysentery amoebic. is common in the tropics, which may lead to liver damage. Name the second kind that, most often is seen in temperate zones?
(a) Bacterial (b) Viral
(c) Fungus (d) Seasonal

43. Which disease chiefly occurs due to over-eating or taking an ill-balanced food?
(a) Dyspepsia or indigestion
(b) Diarrhea
(c) Constipation
(d) Dysentery

44. Which of the following medical disorder is characterized by a tendency to develop fits, which are abnormal feelings caused by abnormal electrical discharges in the cerebral hemispheres of the brain?
(a) Headache (b) Fever
(c) Gastritis (d) Epilepsy

45. Term the disease that attacks great number in one place at one time, and itself travels from place to place?
(a) Epidemic (b) Endemic
(c) Airborne disease
(d) Infection

46. Which term is used for the disease that is always present, to some extent, in local unsanitary conditions and is apt to flare up and becomes epidemic?
(a) Viral (b) Infection
(c) Local (d) Endemic

47. The body temperature above normal is:
(a) Hypertension
(b) High temperature
(c) Fever
(d) Hyper temperature

48. How the moderate fever is helpful?
(a) It warns about the disease
(b) Speeds up the body's chemical processes and mobilizes its immunological defence against infectious disease
(c) It slows the chemical processes in body so body can take rest
(d) None of these

49. Food poisoning is any acute illness characterized by vomiting and diarrhea and caused by eating food contaminated with harmful bacteria, poisonous or poisoned food. What is the frequent cause of food poisoning?
(a) Some viruses
(b) Lead contamination
(c) Salmonella bacteria
(d) Bacterial viruses

50. Which of the following is the death of tissue following loss of blood supply, and this occurs often after obstruction of arteries by injury, thrombosis, or embolism?
(a) Cancer (b) Gangrene
(c) AIDS (d) Leukemia

51. Name the inflammation of stomach lining, which can be either acute or chronic?
(a) Gastritis (b) Ulcer
(c) Gasto-ulcer (d) Epilepsy

52. Which fever is an allergic reaction to pollen, which causes sneezing, with inflammation of the nasal membranes and conjunctiva (a painful eye disease) of the eyes?
(a) Dengue fever
(b) African fever
(c) Hay fever
(d) Allergic fever

53. Mention the common ailment and indication of many diseases and disorders involving the brain, eyes, nose, throat, teeth, and ears?
(a) Fever (b) Headache
(c) Allergy
(d) Inflammation

54. Which disease occurs when the coronary arteries, which supply the heart with oxygen and nutrients, may become diseased with arteriosclerosis that reduces blood flow?
(a) Myocardial infection
(b) Heart attack
(c) Coronary thrombosis.
(d) All of these

55. What is Hepatitis?
(a) Inflammation of liver caused by viral infection
(b) Inflammation of heart caused by viral infection
(c) Inflammation of kidney caused by viral infection
(d) Inflammation of lungs caused by viral infection

56. Hepatitis A is transmitted primarily by contaminated food or unsterilized hypodermic needles. How the hepatitis B is transmitted?
(a) By injections, usually during blood transfusion
(b) Through sexual contact
(c) Both (a) & (b)
(d) None of them

57. Which kind of Hepatitis is transmitted through blood and body fluids?
(a) Hepatitis C (b) Hepatitis A
(c) Hepatitis B (d) Hepatitis F

58. Hepatitis E is transmitted in contaminated drinking water. How the Hepatitis D is transmitted?
(a) Only if the Hepatitis B is present
(b) Only if the Hepatitis C is present
(c) Only if the Hepatitis D is present
(d) Only if the Hepatitis A is present

59. Pick out the disease that is swelling of part of an internal organ through a weakness in the surrounding muscular wall, usually in the groin?
(a) Appendicitis
(b) Hernia or rapture
(c) Tumour
(d) None of these

60. What causes shingles?
(a) Herpes Zoster
(b) Virus
(c) Mosquitoes
(d) Haps Bacterium

61. Name an intensely itchy skin reaction characterized by raised smooth red or pale weals?
(a) Allergy (b) Cancer
(c) Tumour
(d) Hives (urticaria)

62. Hypertension is abnormally high blood pressure that leads to excessive contraction of the smooth muscle cells of the walls of the arteries. Name the disease(s) whose risk is increased by Hypertension?
(a) Stroke
(b) Kidney disease
(c) Heart attack
(d) All of these

63. What is the type of influenza, whose symptoms are fever, muscle pain, sore throat, coughing, loss of appetite and general weakness?
(a) Bacterium disease

(b) Allergic disease
(c) Viral infection of continuation of water
(d) An airborne viral infection

64. Which disease's complications include viral pneumonia, which can lead to a rapidly progressive pneumonia owing to further bacterial infection by staphylococci?
(a) Influenza (b) Anthrax
(c) Hay fever (d) Malaria

65. Sleeplessness caused by mental or physical exhaustion, worry, excitement, nervousness etc is known as ______
(a) Coma
(b) Unconsciousness
(c) Insomnia. (d) Faint

66. Jaundice is yellow discoloration of the skin and whiteness of the eyes. What is its cause?
(a) Liver weakness
(b) Stoppage of blood production
(c) Minimization, of red blood cells
(d) Excess of the bile pigment in the bloodstream

67. What is called debilitating (weakness of body or brain) condition that results from an accumulation of lead in the body. usually from water pipes or lead based paint?
(a) Food poisoning
(b) Lead poisoning
(c) Blood poisoning
(d) Lead fatigue

68. Pick out the disease(s) which can be occurred due to Lead poisoning?
(a) Constipation
(b) Anemia
(c) Paralysis (d) All of these

69. Leukemia is anyone of a group of cancers of the blood cells, with widespread involvement of the bone marrow and other blood-forming tissue. What is the central feature of leukemia?
(a) Clotting of blood
(b) Blood scarcity
(c) Runway production of white blood cells that are immature or in some way abnormal
(d) Runway production of red blood cells that are immature or in some way abnormal

70. Which of the following is an infectious parasitic disease of tropics transmitted by mosquitoes, that causes periodic fever and an enlarged spleen?
(a) Hayfever (b) Influenza
(c) Cholera (d) Malaria

71. Measles is an acute virus disease (rubeola): It spreads:
(a) By airborne infection
(b) By contaminated water
(c) By unhygienic environment
(d) By food contamination

72. Symptoms of measles are fever, severe catarrh, small spots inside the mouth, and a raised, blotchy red rash appearing for about a week after two weeks incubation. How it is prevented?
(a) By Anti-measles drugs
(b) Prevention
(c) By Antibiotic drugs
(d) By vaccination

73. Meningitis is caused by bacterial or viral infection. It is the inflammation of:
(a) Meniges (membranes) surrounding the joints
(b) Meniges (membranes) surrounding the brain
(c) Meniges (membranes) surrounding the heart
(d) Meniges (membranes) surrounding the Kidney

74. Which virus infection is marked by fever, pain, and swelling of one or both parotid salivary glands (situated in front of the ears)?

(a) Mumps or infectious parotitis
(b) Herpes (c) Hives
(d) Arthritis

75. What is called that disease in which defect of eye in which a person can see clearly only those objects that are close up is found?
(a) Myopia (b) Hyperopia
(c) Cataract
(d) None of these

76. What is the cause of Myopia?
(a) Eyeball being too long
(b) The cornea and lens system of the eye being powerful
(c) Both (a) & (b)
(d) Not a nor b

77. Which term, in psychology, is a general term to refer emotional disorders, such as anxiety, depression and phobias?
(a) Psych (b) Hypnosis
(c) Neurosis
(d) Mental illness

78. Phobia is an intense and persistent fear of specific object, activity, or situation. Among three types of phobias, simple phobias are fears of specific objects or situations such as animals and heights. Social phobias are fears of appearing stupid or shameful in social situation. What is called that phobia in which fear of open, public places and situations from which escape is difficult is found?
(a) Public phobia
(b) Agoraphobis
(c) Situational phobia
(d) Self phobia

79. Plague is the term applied to any epidemic disease with a high mortality rate. What is usually referred by the term plague?
(a) Bubonic Plague
(b) Bacillus plague
(c) Rate Plague
(d) Black rate plague

80. Name the germ that causes the Bubonic plague and transmitted by flees, carried by the black rats?
(a) Pestis (b) Bacillus
(c) Yersinia Pestis
(d) Bacillus Yersinia pestis

81. Which of the following are swellings, which occur in the rectum and surround the anus?
(a) Hernia
(b) Piles also known as haemorrhoids
(c) Measles
(d) Parkinson's Disease

82. Inflammation of lungs due to bacterial or viral infection is called:
(a) Hepatitis A (b) Pneumonia
(c) Jaundice
(d) Yellow fever

83. Mention the viral infection of the central nervous system affecting nerves that activate muscles?
(a) Herpes (b) Mumps
(c) Diphtheria
(d) Polio (poliomyelitis)

84. Which term is used for a serious mental disorder where the individual commonly loses contact with reality and may experience hallucinations or delusions?
(a) Phobia (b) Addiction
(c) Psychosis or Psychotic disorder
(d) Neurosis

85. Radiation sickness is characterized by loss of cells form bone marrow and the lining of stomach. What is its cause?
(a) High exposures of X-rays
(b) High exposures of radiation
(c) High exposures of heavy water
(d) High exposures of sunrays

86. Rickets is the defective growth of bone in children. What is the cause of rickets?
(a) Insufficiency of bone marrow

(b) Insufficiency of vitamin D
(c) Excess of calcium deposits
(d) Insufficiency of calcium deposits

87. What is Scurvy?
(a) Disease caused by deficiency of vitamin C
(b) Disease caused by deficiency of vitamin A
(c) Disease caused by deficiency of vitamin B
(d) Disease caused by deficiency of calcium

88. Which disease occurs if the blood supply to the part of brain is interrupted due to sudden blood in the brain or embolism or thrombosis?
(a) Brain hemorrhage
(b) Apoplexy or Stroke or cerebrovascular accident
(c) Brain tumour
(d) Blood clotting

89. Which disease is caused by the toxin, which usually enters the body through a wound, if untreated, in seven to ten days tetanus produces muscular spasm and rigidity of the jaw spreading to other parts of the body, convulsion, and death?
(a) Tetanus or lockjaw
(b) Rickets (c) Survey
(d) Measles

90. Brain trouble brought on by exposure to the rays of the sun is called:
(a) Head stroke
(b) Sunstroke or heatstroke
(c) Hey fever
(d) Radiation sickness

91. What of the following is any of a group of chronic hereditary blood disorders, which are characterized by an abnormality of the red blood cells and bone marrow, with enlargement of spleen?
(a) Blood cancer
(b) Thrombosis
(c) Thalassaemia
(d) Leukemia

92. Overproduction of cells in a specific area of the body often leads to a swelling or lump. What this disease is called?
(a) Tumour (b) Allergy
(c) Cancer (d) Acne

93. Typhoid fever is an acute infectious disease of the digestive tract and usually contracted through a contaminated water supply. Which germ causes the typhoid fever?
(a) Bacterium typhoid
(b) Bacterium typhi
(c) Bacterium Salmonella typhi
(d) Bacterium Salmonella

94. What are the characteristics of typhoid fever?
(a) Damage to spleen
(b) Bowel haemorrhage
(c) Both (a) & (b)
(d) None of them

95. What is the name of that organ which is situated near stomach and it controls quality of blood?
(a) Liver (b) Spleen
(c) Heart
(d) None of them

96. What is ulcer?
(a) Any persistent breach in a body surface
(b) A disease of stomach
(c) A disease of large intensity
(d) Any bleeding point in a body

97. Aphthous or mouth ulcer on gastric are the common ulcers. Where gastric is found?
(a) Heart (b) Liver
(c) Stomach (d) Kidney

98. Pick out an acute infectious disease, seen mainly in children, that is caused by colonization of the air passengers by the bacterium Bordetella Partussia?
(a) Mumps
(b) Sneezing cough

(c) Whooping cough
(d) Measles

99. Which of the following is a common form of dermatitis that is rash or inflammation of the skin?
(a) Eczema (b) Tumour
(c) Allergy (d) Ulcer

100. What is glaucoma?
(a) A disease of heart
(b) A disease of liver
(c) Increased pressure within the eyeball that destroys the optic nerve
(d) Destroys the cones

101. What is cross-eyes?
(a) Out of focus eyes
(b) Due to imbalance in ocular muscles eyes turn inward or outward
(c) Week eyes
(d) Eyes, which cannot be operated

102. A disease occurring here and there apparently having no connection with its origin is called:
(a) Epidemic (b) Endemic
(c) Rootless (d) Sporadic

103. A disease affecting two or more countries or even continents is caused:
(a) Epidemic (b) Pandemic
(c) Endemic (d) Sporadic

104. What is called the keeping in detention or isolation of a traveller for some specific period at some seaport or airport due to his arrival from an infected area?
(a) Incubation (b) Quarantine
(c) Green light area
(d) Safe area

105. What is a contagious disease?
(a) That is caused by actual contact with the patient
(b) That is found in all members of a family
(c) Which spread very rapidly
(d) Which spread in whole country

106. Name the instrument that is used to measure blood pressure?
(a) Sphygmomanometer
(b) Pressure apparatus
(c) B.P. meter
(d) Stethoscope

107. What is physiotherapy?
(a) Curative method for immobility of joints
(b) Curve without medicine
(c) A Latin way of cure
(d) None of these

108. The psychological study of life in artificial environment is:
(a) Biopsy (b) Cyber study
(c) Halucio-study
(d) Biopy

109. What does mean by 'addiction'?
(a) Craving for certain drugs
(b) Craving for certain drugs and foods
(c) Dependency on certain drugs and foods
(d) Certain drugs without which certain persons cannot live

110. Name the mosquito that causes malaria fever?
(a) Monopheles
(b) Anopheles
(c) Onopheles
(d) None of these

111. Which medicine for malaria is obtained from cinchona?
(a) Quinine (b) Fancidar
(c) Fancicinh (d) Quinox

112. How many people are suffering, from HIV/AIDS, according to UN report?
(a) 30 million (b) 25 million
(c) 33 million (d) 20 million

113. Which disease has been totally eliminated from the world?
(a) Malaria (b) Smallpox
(c) Chickenpox (d) Polio

114. What of the following can be detected if the rickety appearance is present?
(a) Rickets
(b) Parkinson's disease

(c) Measles
(d) Down's syndrome

115. Pick out the disease, which is called "Gingivitis"?
(a) Inflammation of arteries
(b) Inflammation of lungs
(c) Inflammation of gums
(d) Inflammation of throat

116. What is chemotherapy?
(a) Treatment of disease by chemical substance
(b) Treatment of cancer
(c) Treatment with chemicals and physiotherapy
(d) All of these

117. Mention the treatment of a disease by the internal and external use of water?
(a) Hydropathy
(b) Waterotheropy
(c) Wateropathy
(d) Hydrophoby

118. What is virology?
(a) Study of virus diseases
(b) Elimination of virus
(c) Study of viruses
(d) All of these

119. Name the first disease that was shown by bacteria, whose spores can survive for years and may be picked up from infected animals or bone meal?
(a) Measles (b) Chickenpox
(c) Anthrax (d) Polio

120. Who developed the vaccine that is effective for Anthrax?
(a) Edward Gibbon
(b) Louis Pasteur
(c) Adam Pasteur
(d) Ronald Ross

121. What the round or ball shaped bacteria are called?
(a) Circubacteria
(b) Bracilli
(c) Bicille (d) Bacterium

122. What was the achievement of Ronald Ross?
(a) Discovered the cause of polio
(b) Discovered the cause of chickenpox
(c) Discovered the cause of diabetics
(d) Discovered the cause of malaria

123. Which substance is produced by the blood to counteract the effect by poison or infection?
(a) Antigen (b) Anti-toxin
(c) Arsemic (d) Toninal

124. Which of these is the most commonly performed surgical operation?
(a) Tonsil removal
(b) Heart Transplant
(c) Hernia repair
(d) Removal of appendix

125. Alzheimer's disease is a form of:
(a) Dementia
(b) Down's Syndrome
(c) Cancer
(d) Blood irregularity

126. If you suffered from Bright's disease, which part of your body would be affected?
(a) Kidneys (b) Lungs
(c) Heart (d) Brain

127. What are arnica, belladonna and gelsemium?
(a) Herbal medicines
(b) Elements
(c) Hemeopathic medicines
(d) Types of buttercup

128. What is disease?
(a) Breakdown of the body's natural defence
(b) Weakness of immune system
(c) Weakening of body tissues
(d) Weakening of body cells

129. Acne is a common skin disease, which results in pimples on the face and upper trunk. What is the cause of Acne?
(a) Inflammation of the Sebaceous glands
(b) Accumulation of fats
(c) Growth of dead cells
(d) Unknown

130. AIDS is a sexually transmitted disease. It is the acronym for:
(a) Applied Immune Syndrome
(b) Acquired Syndrome
(c) Acquired Immune Deficient System
(d) Acquired Immune Deficiency Syndrome

131. AIDS is caused by the human Immunodeficiency Virus (HIV). It is transmitted in body fluids, mainly blood and genital secretion. When HIV was identified?
(a) 1983 (b) 1985
(c) 1980 (d) 1987

132. What is the effect of HIV in those who become the victim of it?
(a) Destruction of white blood cells
(b) Destruction of Red blood cells
(c) Devastation of the immune system
(d) Weakening of the immune system

133. Which of the following is special sensitivity of the body that makes it react with an exaggerated response of the natural immune defence mechanism to the introduction of an otherwise harmless foreign substance?
(a) Sensitivity (b) Antiseptic
(c) Temperature
(d) Allergy

134. Point out the disease that is considered the most common cause of death, in west, after heart disease, cancer and stroke?
(a) AIDS
(b) Kidney failure
(c) Alzheimer's Disease
(d) Parkinson

135. Alzheimer's disease is a common indication of dementia. Why is it known as a disease of mental processes rather than physical function, characterized by memory loss and progressive intellectual impairment?
(a) It attacks on the brain's 'grey matter'
(b) It attacks on the brain's nerves
(c) It attacks on the brain's cells
(d) All of these

136. Distortion of vision due to defect in shape of the cornea or lens is called:
(a) Myopia (b) Astigmatism
(c) Both of them
(d) None of them

137. Which disease is caused by a shortage of hemoglobin, whose main symptoms are fatigue, pallor (skin's paleness), breathlessness, palpitations, and poor resistance to infections?
(a) Leukemia
(b) Blood cancer
(c) Anemia (d) Asthma

138. An epidemic of what killed over 20 million people worldwide in 1918 and 1919?
(a) Smallpox
(b) Tuberculosis
(c) Cholera
(d) Influenza

139. When treating the following conditions, in which is it most important to reduce your intake of sugar?
(a) Obesity
(b) High blood pressure
(c) Tonsillitis
(d) Low blood pressure

140. For what Tetracycline is used?
(a) Water Infections
(b) Bacterial Infections
(c) Cancer
(d) None of these

141. BCG vaccination is injected to get immune from:
(a) Tuberculosis
(b) Cancer (c) Smallpox
(d) Influenza

142. Quantitative analysis of DNA is used to establish the:
(a) Genes of a child
(b) Paternity of a child
(c) White cells in the blood of a

called
(d) None at these

143. Mention the modern tool for imaging brain tumours?
(a) Magnetic resonance
(b) Magnetic shocks
(c) Magana tic rays
(d) Magnetic x-rays

144. In human kidney stones mostly consist of:
(a) Calcium carbonate
(b) Calcium oxalate
(c) Calcium sulphate
(d) Calcium Phosphorus

145. Lithotripsy is the procedure of crushing of _______ by laser:
(a) Gallstones
(b) Kidney stones
(c) Both (a) & (b)
(d) None of these

146. What can cause cancer and can cure it as well depending upon its intensity and use?
(a) Ultra-violet rays
(b) X rays
(c) Beta-rays
(d) Mega-rays

147. On what the Biopsy is done?
(a) Tissue taken from a living body
(b) Tissue taken from dead body
(c) Tissue taken from both living and dead body
(d) None of these

148. The number of autosomes in man are:
(a) 20 pairs (b) 21 pairs
(c) 22 pairs (d) 23 pairs

149. The important role vitamins play in body is as:
(a) Enzyme (b) Coenzyme
(c) Accelerator of metabolic reaction
(d) Both (b) & (c)

150. The water borne disease is:
(a) Typhoid (b) Cholera
(c) Malaria
(d) Both (a) & (b)

Answers

1.	(d)	2.	(c)	3.	(a)	4.	(c)
5.	(b)	6.	(d)	7.	(c)	8.	(b)
9.	(a)	10.	(a)	11.	(d)	12.	(a)
13.	(d)	14.	(a)	15.	(c)	16.	(b)
17.	(a)	18.	(d)	19.	(b)	20.	(c)
21.	(c)	22.	(b)	23.	(c)	24.	(b)
25.	(b)	26.	(a)	27.	(c)	28.	(b)
29.	(b)	30.	(a)	31.	(d)	32.	(c)
33.	(b)	34.	(c)	35.	(a)	36.	(c)
37.	(d)	38.	(d)	39.	(c)	40.	(c)
41.	(c)	42.	(a)	43.	(a)	44.	(d)
45.	(a)	46.	(d)	47.	(c)	48.	(b)
49.	(c)	50.	(b)	51.	(a)	52.	(c)
53.	(b)	54.	(d)	55.	(a)	56.	(c)
57.	(a)	58.	(a)	59.	(b)	60.	(a)
61.	(d)	62.	(d)	63.	(d)	64.	(a)
65.	(c)	66.	(d)	67.	(b)	68.	(d)
69.	(c)	70.	(d)	71.	(a)	72.	(d)
73.	(b)	74.	(a)	75.	(a)	76.	(c)
77.	(c)	78.	(b)	79.	(a)	80.	(d)
81.	(b)	82.	(b)	83.	(d)	84.	(c)
85.	(b)	86.	(d)	87.	(a)	88.	(b)
89.	(a)	90.	(b)	91.	(c)	92.	(a)
93.	(c)	94.	(c)	95.	(b)	96.	(a)
97.	(b)	98.	(c)	99.	(a)	100	(c)
101	(b)	102	(d)	103	(b)	104	(b)
105	(a)	106	(a)	107	(a)	108	(d)
109	(b)	110	(b)	111	(a)	112	(c)
113	(b)	114	(d)	115	(c)	116	(a)
117	(a)	118	(c)	119	(c)	120	(b)
121	(b)	122	(d)	123	(b)	124	(d)
125	(a)	126	(a)	127	(c)	128	(a)
129	(a)	130	(d)	131	(a)	132	(c)
133	(d)	134	(c)	135	(a)	136	(b)
137	(c)	138	(c)	139	(a)	140	(b)
141	(a)	142	(b)	143	(a)	144	(b)
145	(c)	146	(a)	147	(a)	148	(c)
149	(d)	150	(d)				

Mohsan

MEDICINE & TREATMENT

Write the correct answer:

1. Which of them cannot be prophylatically vaccinated?
   (a) Hepatitis B (b) Hepatitis C
   (c) Tetanus (d) Influenza

2. Vaccination is a process to produce in body:
   (a) Active immunity
   (b) Passive immunity
   (c) Domant immunity
   (d) Cell mediated immunity

3. Sodium bi carbonate is also used as a household remedy for:
   (a) Body ache (b) Headache
   (c) Liver pain (d) Acidity

4. What is normal body temperature?
   (a) 34 °C (b) 33.5 °C
   (c) 37 °C (d) 32 °C

5. Sphygmomanometer is an instrument, which is used for measuring?
   (a) Blood pressure
   (b) Tooth, aching
   (c) Heart beat (d) Temperature

6. E.C.G is an abbreviation of?
   (a) Electro cardiograph
   (b) Electrocardiogram
   (c) Electric cell galvanometer
   (d) Echocardiogram

7. Which of them is a curable disease?
   (a) AIDS (b) Hepatitis
   (c) Benign cancer
   (d) Heart failure

8. Synthetic chemical compound acetylsalicylic acid is commonly known as:
   (a) Aspirin (b) Penicillin
   (c) Chloroform
   (d) None of these

9. Form of health care that prevents disease and maintains a patient's health and well-being through spinal manipulation is:
   (a) Physiotherapy
   (b) Oncology
   (c) Radiotherapy
   (d) Chiropractic

10. Infection, injurious contamination of the body or part of the body by pathogenic agents, such as fungi (see Fungus Infections), bacteria, protozoa, rickettsiae, or viruses, or by the toxins that these agents may produces:
   (a) Physiotherapy
   (b) Oncology
   (c) Radiotherapy
   (d) Chiropractic

11. Quinine is the most appropriate and old drug used for the treatment of:
   (a) Hay fever (b) Meningitis
   (c) Malaria (d) Viral fever

12. Anti Pyretic is used for:
   (a) Pain (b) Dizziness
   (c) Fever
   (d) Heart problem

13. Antibiotic is used for:
   (a) To kill bacteria
   (b) To kill Virus
   (c) To kill Fungi
   (d) None of these

14. Chemotherapy & radiotherapy is the treatment usually used for:
   (a) Malignant cancer
   (b) Benign cancer
   (c) Kidney transplant
   (d) Liver cirrhosis

15. Root canal is treatment for?
   (a) Eye (b) Tooth
   (c) Fracture

(d) None of these

16. Laser cannot be used for the treatment of?
(a) Liver therapy
(b) Eye
(c) Skin (d) Dental

17. For the treatment of near vision the lens is used:
(a) Biconcave (b) Convex
(c) Both (a) & (b)
(d) Plan mirror

18. For the treatment of far vision the lens is used?
(a) Concave (b) Convex
(c) Both (a) & (b)
(d) Plan mirror

19. What is not the effect of Morphine?
(a) Analgesic
(b) Decrease temperature
(c) Respiratory depressant
(d) Euphoria

20. Tuberculosis (T.B.) is treated with?
(a) Ant fungal (b) Antibiotic
(c) Antiviral (d) NSAIDS

21. Flagyl (Metronidazole), a commonly used drug is basically?
(a) Anti fungal (b) Antibiotic
(c) Antimicrobials
(d) Antiviral

22. Penicillin is a common group of drugs of?
(a) Anti-fungal (b) Antiviral
(c) Antibiotic
(d) None of them

23. To examine the liver which of the instrument is used as a diagnostic tool?
(a) Gastro scope
(b) Bronchoscope
(c) Cyst scope (d) Endoscopes

24. Diagnosis of thyroid cancer is done with which iodine?
(a) Iodine 132 (b) Iodine 131
(c) Iodine 130 (d) Iodine135

25. The main function of aspirin is?
(a) Blood thickening
(b) Blood thinning
(c) Pain killer
(d) Muscle relaxants

26. Expectorants are used for:
(a) Expulsion of sputum
(b) Dissolving of sputum
(c) To stop vomiting
(d) To Induce diarrhoea

27. Antihistamine is not used to treat:
(a) Asthma
(b) Systemic Infection
(c) Allergy (d) Ulcer

28. Insulin is used to treat diabetes. Insulin is replacement of the hormone secreted by:
(a) Liver (b) Pancreas
(c) Thyroid (d) Kidney

29. To treat the thyroid deficiency which drug is usually used?
(a) Iodine (b) Insulin
(c) Thyrexin (d) Thyrocine

30. Dialysis is a treatment of kidney. It is recommended in condition of:
(a) Kidney stones
(b) Kidney removal
(c) Kidney failure
(d) Routine procedure for diagnosis

31. When gastric motility increases what happened:
(a) Constipation
(b) Diarrhoea
(c) Obstruction (d) No effect

32. Angioplasty/Anglography is procedure to treat:
(a) Liver (b) Heart
(c) Skin

(d) None of above

33. Kidney stones are break with the help of laser. The treatment is called:

(a) Lithopepsy

(b) Lithotrepsy

(c) Stone removal laser

(d) Litho stone

34. For the treatment of acne which Vitamin usually used:

(a) Vitamin C

(b) Vitamin B

(c) Vitamin K

(d) Vitamin A

35. The first heart transplant operation was performed on Louis Washkanskyaged about 55 years old in South Africa on December 3, 1967 by a team of ______ surgeons headed by Professor Christian Neething Barnard. The donor was Miss Denise Ann Darwall, aged 25, an accident victim:

(a) 20 (b) 25

(c) 30 (d) 40

36. Dr. R.H. Lawler performed the first homo-transplantation of kidney in ______ at Harvard Medical School in US:

(a) 1930 (b) 1940

(c) 1950 (d) 1960

37. First pancreas transplant was attempted in ______ to treat diabetic patients:

(a) 1956 (b) 1966

(c) 1976 (d) 1986

38. Dialysis is related to:

(a) Heart

(b) Kidney

(c) Lungs

(d) Eyes

39. Surgical removal of inflamed appendix from the abdomen is called:

(a) Appendctomy

(b) Cryosurgery

(c) Cystoscopy

(d) None of these

40. Surgical removal of a diseased or damaged kidney is called:

(a) Laparoscopy

(b) Nephrectomy

(c) Dialysis

(d) None of these

Answers

1.	(b)	2.	(b)	3.	(d)	4.	(c)
5.	(a)	6.	(b)	7.	(c)	8.	(a)
9.	(d)	10.	(d)	11.	(c)	12.	(c)
13.	(a)	14.	(a)	15.	(b)	16.	(a)
17.	(a)	18.	(b)	19.	(b)	20.	(b)
21.	(c)	22.	(c)	23.	(c)	24.	(b)
25.	(b)	26.	(a)	27.	(b)	28.	(b)
29.	(c)	30.	(c)	31.	(b)	32.	(b)
33.	(b)	34.	(d)	35.	(c)	36.	(c)
37.	(b)	38.	(b)	39.	(a)	40.	(b)

EFFECTS OF NUTRITION ON HUMAN HEALTH

Tick the correct one:

1. Department of health UK has introduced the following term to show the recommended daily allowance for nutrition:
   (a) Estimated average required
   (b) Lower reference nutrient uptake
   (c) Adequate intake
   (d)✓ Reference nutrient intake
   (e) Tolerable upper intake levels

2. Fiber deficiency does not cause of following disease:
   (a) Constipation
   (b) Colonic cancer
   (c) Appendicitis
   (d) Gall stones (e)✓ Hypertension

3. Optimum requirement of carbohydrates in balanced diet is:
   (a) 15 – 20% (b) 20 – 30%
   (c) 30 – 50% (d)✓ 50 – 75%
   (e) 70 – 90%

4. One gm of fat gives:
   (a) 3 calories (b) 4 calories
   (c) 7 calories (d)✓ 9 calories
   (e) 15 calories

5. Water soluble vitamin is:
   (a) Vit. A (b) Vit. K
   (c)✓ Vit. C (d) Vit. D
   (e) Vit. E

6. Formation of atherosclerotic plaque occurs if there is excessive amount of:
   (a) HDL (High density lipoprotein)
   (b) LDL (Low density lipoprotein)
   (c)✓ VLDL (Very low density lipoprotein)
   (d) TGS (Triglycerides)
   (e) All of the above

7. Amino Acid which is essential for children only and not for adults is:
   (a) Tryptophane
   (b) Phenyl alanine
   (c)✓ Histidine
   (d) Methionine (e) Lysine

8. Average protein consumption pe head per day in Pakistan is:
   (a) 26 gms (b) 36 gms
   (c)✓ 46 gms (d) 56 gms
   (e) 66 gms

9. Micronutrient involved in protei metabolism is:
   (a) Phosphorus
   (b) Sodium (c) Iron
   (d) Magnesium (e)✓ Sulphur

10. Micronutrient essential for enzymati activity in cell is:
   (a)✓ Copper (b) Cobalt
   (c) Manganese (d) Fluorine
   (e) Selenium

11. Cretinism is due to deficiency of:
   (a) Sulphur (b) Zinc
   (c) Flourine (d)✓ Iodine
   (e) Calcium

12. Cardiac rhythm disturbances are no associated with:
   (a) Calcium (b) Potassium
   (c)✓ Magnesium (d) Sulphur
   (e) Sodium

13. Growth retardation and feature o deficiency of:
   (a) Selenium (b) Zinc
   (c) Manganese (d)✓ Iodine
   (e) Cobalt

14. Pyridoxine is actually:
   (a) Vitamin B_1 (b) Vitamin B_2
   (c) Vitamin B_3 (d)✓ Vitamin B_4
   (e) Vitamin B_{12}

15. Orange, lemon and tomato are rich in
   (a) Vit A (b) Vit B
   (c)✓ Vit C (d) Vit D
   (e) Vit E

16. Pellagra is the deficiency of:
   (a) Thiamine (b) Riboflavin
   (c)✓ Niacin (d) Pyridoxine
   (e) Pantothenic Acid

17. Vitamin used in case of threatene abortion in females is:
   (a) Vit A (b) Vit D

(c)✓ Vit E (d) Vit K
(e) Vit C

18. Xerophthalmia is associated with deficiency of:
(a)✓ Vitamin A (b) Vitamin B
(c) Vitamin C (d) Vitamin D
(e) Vitamin K

19. Feature not associated with scurvy is:
(a) Bleeding and retraction of gums
(b) Tendency of hemorrhage from skin capillaries
(c) Dental caries
(d)✓ Early graying of hair and baldness
(e) Delay in wound healing

20. In balanced diet protective foods are:
(a) Carbohydrates
(b) Fats (c) Proteins
(d)✓ Vitamins (e) Minerals

21. Addition of baking powder in food destroys:
(a) Vitamin A (b) Vitamin E
(c) Vitamin K (d) Vitamin D
(e)✓ (c) & (d)

22. Vitamins which act as antioxidants in body are:
(a) Vit A & Vit D
(b) Vit A & Vit E
(c) Vit D & Vit E
(d)✓ Vit E & Vit C
(e) Vit C & Vit D

23. Best source of omega-3-fatty acids is:
(a) Beef (b) Meat
(c) Chicken (d)✓ Fish
(e) Duck

24. Nuts are used as richest source of:
(a) Natural oils
(b) Carbohydrates
(c)✓ Copper & magnesium
(d) Vitamin A (e) Potassium

25. One of the statement about fiber rich diet is not true:
(a) Fibers regulate serum cholesterol level
(b) Fibers increase feacal bulk
(c) Fibers act as laxatives
(d)✓ Fibers increase the incidence of colon cancer
(e) Fibers increase water content of stool

26. For adult, the average caloric need per pound of body weight is:
(a)✓ 20 calories (b) 30 calories
(c) 40 calories (d) 50 calories
(e) 60 calories

27. Basal metabolism is not effected by:
(a) Age & sex (b) Raee
(c) Surface area
(d) External temperature
(e)✓ All of the above

28. Amount of calories required at the age of 1 year per day is:
(a) 700 calories
(b)✓ 800 calories
(c) 1000 calories
(d) 1300 calories
(e) 1600 calories

29. Infant diet is always deficient in:
(a) Fats (b) Vitamin E
(c)✓ Vitamin C (d) Vitamin K
(e) Vitamin B

30. Factor which affects the food intake of pregnant female is:
(a)✓ Social customs
(b) Family habits
(c) Family knowledge of nutrition
(d) Food that is available
(e) Likes & dislikes

31. Assessment of nutritional status of an adult person is independent of:
(a) Mid arm circumference
(b) Body shape
(c) Body mass index BMI
(d)✓ Length (e) Weight

32. Parameter used to assess the chronic malnutrition is:
(a) Mid arum circumference
(b) Body shape
(c) Body mass index (BMI)
(d)✓ Height (e) Weight

33. Commonest type of malnutrition under 5 years of age in Pakistan is:

(a) Starvation
(b)✓ Under nutrition
(c) Specific deficiency
(d) Imbalance
(e) Over nutrition

34. Kwashiorkor is the deficiency of:
(a) Enough calories
(b) Carbohydrates
(c)✓ Proteins
(d) Fats (e) Minerals

35. First sign of chronic malnutrition in adult is:
(a) Growth retardation
(b)✓ Anemia
(c) Oedema
(d) Loss of resistance
(e) Weakness

36. Prolonged nutritional deficiency in children results in:
(a) Wasting (b)✓ Stunting
(c) Reduction in weight for height
(d) Reduction in arum circumference
(e) Reduction in muscle mass

37. Marasamus is not characterized by:
(a) Arrested growth
(b) Muscle wasting
(c) Diarrhea
(d) Mental apathy
(e)✓ Enlarged liver

38. First sign of vitamin A deficiency is:
(a) Corneal xerosis
(b) Xerophthalmia
(c) Ulceration
(d)✓ Night blindness
(e) Karatomalacia

39. Richest source of vitamin A is:
(a)✓ Carrots
(b) Green leafy vegetables
(c) Fish
(d) Butter (e) Egg yolk

40. In national immunization days polio drops are accompanied with:
(a)✓ Vitamin A (b) Vitamin B
(c) Vitamin C (d) Vitamin D
(e) Vitamin K

41. To prevent hemorrhagic disease injection of following vitamin given:
(a) Vitamin A (b) Vitamin C
(c) Vitamin D (d) Vitamin E
(e)✓ Vitamin K

42. Pigeon breast and bowing of legs sign of deficiency of:
(a) Vitamin A (b) Vitamin B
(c)✓ Vitamin D (d) Vitamin E
(e) Vitamin K

43. Wrist or ankle drop is pathogono of:
(a) Rickets (b)✓ Beri Beri
(c) Pellagra (d) Scurvy
(e) Cretinism

44. Prolonged ingestion of polished results in:
(a)✓ Beri Beri (b) Pellagra
(c) Scurvy (d) Anaemia
(e) Cretinism

45. One of the following statement ab infantile scurvy is not true:
(a) It occurs in artificially infants
(b) Child does not move lower voluntarily
(c) It is accompanied enlargement of costochond junctions
(d)✓ It is painless condition
(e) There are hemorrhages periosteum of bones

46. Breast milk is deficient in:
(a) Iron (b) Proteins
(c) Immunoglobulin
(d) Vitamin A (e)✓ Vitamin C

47. Macrocytic anaemia due to deficie of nutritional factor is:
(a) Anaemia of pregnancy
(b)✓ Pernicious anaemia
(c) Anaemia of sprue
(d) Anaemia of coeliac disease
(e) Hypochromic anaemia

48. Deficiency of iron results in:
(a) Normochromic anaemia
(b) Normocytic normochro anaemia
(c) Macrocytic anaemia

(d)✓ Microcytic, Hypochromic anaemia
(e) Microcytic, normochromic anaemia

49. One of the major nutritional health problem in Hill areas of Pakistan is high prevalence of:
(a) Anaemia (b) Scurvy
(c) Pellagra (d)✓ Goiter
(e) Night blindness

50. Excessive use of foods rich in cyanate:
(a)✓ Slows absorption of iodine
(b) Enhances absorption of iodine
(c) Competes with iodine
(d) Make insoluble compounds with iodine
(e) Has no effect on iodine absorption

51. Burning feet syndrome is characterized by deficiency of:
(a) Thiamine (b) Niacin
(c)✓ Pentathonic acid
(d) Riboflavin (e) Pyridoxine

52. Body mass index which indicates obesity in males is more than:
(a) 20 (b)✓ 30
(c) 40 (d) 50
(e) 60

53. Obesity prevalence is highest in most developed countries "due to:
(a) Familial factors
(b)✓ Physical inactivity
(c) Eating habits
(d) Psychological factors
(e) Endocrinal factors

54. Obesity is not related to development of:
(a) Varlcose veins
(b) Abdominal hernia
(c)✓ Flat feet
(d) Arthritis (e) High fertility

55. Most effective means to control obesity is:
(a) Liposuction
(b) Banding of stomach
(c) Use of appetite suppressing drugs
(d)✓ Physical activity
(e) Change in dietary habits

56. Best way to conduct a diet survey in a community is by:
(a)✓ Questionnaire method
(b) Weighment of raw food
(c) Weighment of raw and cooked food
(d) Chemical analysis method
(e) Combination of all

57. Most reliable indicator in anthropometric measurements is:
(a) Chest measurement
(b) Mid arm circumference
(c) Head circumference
(d)✓ Weight for age
(e) Height for age

58. Base of food pyramid is made of:
(a) Sugars (b) Fats & oils
(c) Proteins (d)✓ Starches
(e) Fruits & vegetable

59. Maximum health concern arises by:
(a)✓ Food contamination
(b) Food poisoning
(c) Food toxemia
(d) Food allergy
(e) Food adulteration

60. Organism present in cracked uncooked egg is:
(a)✓ S. typhi
(b) S. paratyphi A
(c) S. paratyphi B
(d) S. typimurium
(e) S. enteritidis

61. Examples of food infection does not include:
(a) Vibreo cholera
(b) Salmonella
(c) Staphylococcal
(d)✓ Botulism (e) Amoebiasic

62. Diagnosis of food infection is strongly correlated with:
(a)✓ History of common intake
(b) Examination of suspected food
(c) Symptoms suggestive of food poisoning
(d) Isolation of organism from vomitus
(e) Isolation of organism from stool

63. Clostrium Botulinum infection by food is characterized by:
(a) Food poisoning due to endotoxin
(b) There is fever of 102F°
(c) Gastro intestinal system is affected mainly
(d)✓ Symptoms appear in 18 – 36 ills
(e) Requires aerobic conditions to grow in food

64. Thermal death point of Clostrium Bolulinum at boiling temperature is:
(a) 30 minutes (b) 1 hour
(c) 2 hours (d)✓ 5 hours
(e) 10 hours

65. Regarding "Botulism" one of the following statement is false:
(a) Ascending type of paralysis is observed
(b) Third cranial nerve is involved mostly
(c)✓ There is severe pain during deglutination
(d) Consciousness is retained
(e) Pulse is rapid and temperature is subnormal

66. Aflatoxins are produced by:
(a) Sterigmatocystin
(b)✓ Aspergillus flavus
(c) Aspergillus versicolour
(d) Pencillium expansum
(e) Pencillium islandicium

67. Vegetable oils are poor in:
(a)✓ Vitamin A (b) Vitamin C
(c) Vitamin B (d) Vitamin K
(e) Vitamin E

68. Disease in which animal is not condemned to be slaughtered is:
(a) Tuberculosis
(b) Anthrax
(c) Actinomycosis
(d)✓ Brucellosis
(e) Tape worm cysts

69. Disease acquired occupationally by the meat handlers is:
(a) Tuberculosis
(b)✓ Anthrax
(c) Actinomycosis
(d) Leptospirosis
(e) Tape worm

70. Saxitoxin in shell fish is characterized by the following feature:
(a) It is destroyed by cooking
(b) Common condition in Pakistan
(c) Appearance of sign and symptoms after 24 hours of ingestion
(d)✓ Appearance of neurological symptoms
(e) Toxin is heat labile

71. One ounce of egg yields:
(a) 22 calories (b) 32 calories
(c) 42 calories (d) 52 calories
(d)✓ 62 calories

72. Major protein content of milk is:
(a)✓ Caseinogens
(b) Lactalbum
(c) Lactoglobulin
(d) Fibrin (e) Mucin

73. Principal mineral salt in milk is:
(a) Calcium carbonate
(b)✓ Calcium phosphate
(c) Calcium bicarbonate
(d) Potassium bicarbonate
(e) Sodium chloride

74. Disease which is not transmitted consumption of milk is:
(a) Typhoid & paratyphoid fever
(b) Tuberculosis
(c) Diphtheria
(d)✓ Amoebic dysentery
(e) Septic sore throat

75. Malta-fever is transmitted through:
(a) Human milk
(b)✓ Goat milk
(c) Buffaloes milk
(d) Cow's milk (e) Pig's milk

76. Commonest form of adulteration of milk in factories is:
(a) Addition of boric acid
(b) Addition of formaldehyde
(c)✓ Addition of gelatin powder
(d) Watering (e) Skimming

77. According to Pakistan's legal standards fat content in cow's milk should be:
(a)✓ 5% (b) 4.5%
(c) 5.5% (d) 6.5%

(e) 7.5%

78. Supplementation with orange juice is required when infant is consuming milk produced by:
(a) Simple pasteurization
(b) Flow flash pasteurization
(c) Retainer pasteurization
(d)✓ Drying (e) Skimming

79. In process of pasteurization of milk:
(a) Required temperature is 50C°
(b) Iodine content of milk increases
(c)✓ Vitamin C is totally lost
(d) Slight coagulation of lactalbum results
(e) Taste & appearance of milk is changed

80. Peutrification of food starts earlier in the following method of preservation of food:
(a) Refrigeration
(b) Drying
(c) Salting & picking
(d)✓ Smoking (e) Canning

81. Respiratory quotient (R.Q.) falls in all the following conditions except:
(a)✓ Acidosis
(b) Febrile conditions
(c) Diabetes mellitus
(d) Starvation

82. Choose the incorrect statement about BMR out of the following:
(a) BMR is directly related to the surface area
(b) BMR is inversely proportional to the age
(c)✓ BMR is increased in warm climate
(d) Males have higher BMR than age matched females

83. The percentage of total calories obtained from carbohydrates should be between:
(a) 15- 20% (b) 20-35%
(c)✓ 50-60% (d) 5-10%

84. All are true about milk as a diet except:
(a) It is low in iron content but rich in calcium, sodium and potassium
(b) The major carbohydrate is lactose
(c) The chief proteins are caseinogens and lactalbumin
(d)✓ It is rich in vitamin C and D but poor in Vitamin A and Riboflavin.

85. In a child suffering from marasmus which of the following clinical manifestation is not observed?
(a) Watery diarrhea with acid stools
(b) Subnormal temperature
(c) Visible peristalsis from thin abdominal wall
(d)✓ Generalized edema

86. The chemical score of gelatin is –
(a)✓ 0 (b) 44
(c) 60 (d) 42

87. Which of the following has the best chemical score?
(a) Wheat (b)✓ Egg
(c) Milk (d) Pulses

88. In a person on hunger strike from the past three days which of the following urinary tests would give a positive reaction?
(a) Benedict (b) Barfoed
(c)✓ Rothera (d) Biuret

89. A child has presented with growth retardation, inability to walk and bruises all over the body. Which of the following nutrients should be recommended as a supplement to the diet?
(a) Milk (b) Egg yolk
(c)✓ Citrus fruits (d) Pulses

90. Which of the following has the highest glycemic index?
(a) Ice cream (b) Cucumber
(c) Bread (d)✓ Dextrose

91. All except one are true about the significance of dietary fiber?
(a) It promotes peristalsis
(b) Reduces Cholesterol absorption
(c)✓ Increases glycemic index
(d) Acts as an anti oxidant

92. Which of the following has the highest Specific dynamic action (SDA)?

(a)✓ Egg (b Potato
(c) Corn oil (d) Mango

3. An 8 months-old-child has been brought to the pediatric OPD. The examination reveals a thin lean emaciated child. There is history of diarrhea and refusal to feeds from the last few days. The child has been diagnosed with 'marasmus'. What could have been the source of energy to the brain cells during the period of food deprivation?
(a) Glucose (b) Fatty acids
(c)✓ Ketone bodies
(d) Branched chain amino acids.

94. A 34- year-old female has reported with a history of forgetfulness, loss of hair and cold intolerance. She has been diagnosed with hypothyroidism. What would be the effect of this disease on BMR?
(a) BMR remains unaltered
(b) BMR increases
(c)✓ BMR goes down
(d) There is initialrise with a subsequent fall.

95. A 68-year- old male has been brought to the emergency in a state of coma. The patient is a known alcoholic from the past 10 years. A diagnosis of hepatic encephalopathy has been made. Which of the following nutrient should be avoided so as to reduce the ammonia formation in the body?
(a)✓ Protein
(b) Carbohydrates
(c) Fats
(d) Minerals and vitamins

6. An adequate amount of tyrosine can reduce the requirement of Phenyl alanine in the diet, this effect is said to be:
(a) Mutual supplementation of nutrients
(b)✓ Sparing effect
(c) Specific dynamic action
(d) None of the above

97. Which of the following is a correct statement to justify the cause of fatty liver in Kwashiorkor?
(a) There is more mobilization of lipids from adipose mass
(b) There is more synthesis of lipids in the liver
(c)✓ There is deficiency of apo B100 protein
(d) All of the above

98. In diabetes mellitus there is reduced oxidation of carbohydrates: what will the effect of insulin administration on RQ?
(a)✓ It will increase
(b) It will decrease
(c) No effect
(d) Initialrise and then fall

99. Which of the following is not a component of dietary fiber?
(a) Cellulose (b) Pectin
(c) Lignin (d)✓ Agar

100. Which of the following nutrients is rich in short and medium chain fatty acids?
(a)✓ Milk (b) Peanut oil
(c) Sunflower oil
(d) Almond oil

101. Human most easily tolerate a lack of which of the following nutrient?
(a) Protein (b)✓ Carbohydrate
(c) Lipids (d) Calcium

=========

NUTRITION

FATS, CARBOHYDRATES PROTEINS, VITAMINS, MINERALS & ENZYMES

Tick the correct one:

1. The active site of an enzyme:
   (a) Never changes
   (b) Forms no chemical bond with substrate
   (c)✓ Determined by structure and the specificity of the enzyme
   (d) They are non specific in their action
2. Which one forms the raw material for coenzymes?
   (a)✓ Vitamins
   (b) Carbohydrates
   (c) Proteins (d) Metals
3. Optimal temperature of enzymes present in human body is:
   (a) 27°C (b)✓ 37°C
   (c) 47°C (d) 30°C
4. Which step causes activation of catalytic site of an enzyme?
   (a) Change is pH of the surroundings
   (b)✓ Formation of enzyme substrate complex
   (c) Change in the charge of the active site
   (d) Change in temperature
5. Enzymes are composed of hundreds of:
   (a) Cofactors (b) Coenzymes
   (c) Prosthetic group
   (d)✓ Amino acids
6. The substance that sometimes acts as a source of chemical energy helping to drive the reaction that would otherwise be difficult or impossible is:
   (a) Substrate (b) Coenzyme
   (c)✓ Cofactor
   (d) Metal activator
7. If non-protein part of the enzyme is loosely attached to the protein part it is known as:
   (a) Cofactor
   (b) Prosthetic group
   (c) Metal activator
   (d)✓ Coenzyme
8. The essential raw material from which the coenzymes is made:
   (a) Metal Ions (b)✓ Vitamins
   (c) Proteins
   (d) Carbohydrates
9. The enzyme involved in the synthesis of proteins is integral part of:
   (a) Chloroplasts
   (b) Mitochondria
   (c) Golgi complex
   (d)✓ Ribosome's
10. Biological molecules (proteins) which catalyze a biochemical reaction and remain unchanged after completion of reaction are called:
   (a) Cofactor (b) Coenzymes
   (c) Activator (d)✓ Enzymes
11. The active site of enzyme is made up of how many regions:
   (a) Two (b)✓ Three
   (c) Four (d) Five
12. Most enzymes:
   (a) Lie freely in cytoplasm
   (b) Are bond to certain organelles
   (c) Are present in the nucleus
   (d)✓ Some lie freely in cytoplasm and other share bound to organelle
13. Which of the following stimulate the secretion of gastric glands?
   (a) Secretin (b)✓ Gastrin
   (c) Bile (d) Pancreatin

14. Autotrophic organisms can exist in which environment?
(a) Organic (b)✓ Inorganic
(c) Wet (d) Terrestrial

15. Pancreatic amylase is also called:
(a) Secretin (b) Gastrin
(c) Lipase (d)✓ Amylopsin

16. The liquid that escapes during defrosting frozen meat contains _____ bacteria:
(a) Campylobacter
(b) Nitrobacter
(c) Azobacter (d)✓ Salmonella

17. Insectivorous plants are:
(a)✓ Autotrophic
(b) Saprophytic
(c) Symbiotic (d) Parasites

18. The protein content of edible portion of egg is:
(a) 15% (b)✓ 13.3%
(c) 10.3% (d) 5%

9. Among the following food items, which one has the highest amount of carbohydrates?
(a) Apple (b)✓ Banana
(c) Cabbage (d) Pea

20. Which among the following is the richest source of ascorbic acid?
(a) Apple (b) Bean
(c) Carrot (d)✓ Guava

21. In the balanced dietaries for a day of an adult working man, weights of carbohydrate food and total protein food (both superior and inferior) should be in order of:
(a) 420 gm and 420 gm respectively
(b) 420 gm and 600 gm respectively
(c)✓ 600 gm and 420 gm respectively
(d) 600 gm and 600 gm respectively

22. Which of the following is not considered a fat soluble vitamin?
(a) Vitamin A (b)✓ Vitamin B
(c) Vitamin K (d) Vitamin E

23. Which of the following is not considered a water soluble vitamin?
(a) Vitamin B (b) Vitamin C
(c)✓ Vitamin D (d) Vitamin B_{12}

24. Which of the following is caused by a Vitamin D deficiency?
(a) Edema (b) Anemia
(c) Lupus (d)✓ Rickets

25. What disease is caused by a deficiency of Vitamin C (Ascorbic Acid)?
(a)✓ Scurvy (b) Pellagra
(c) Beriberi (d) Rickets

26. Citrus fruits are one of the best sources of:
(a) Vitamin A (b)✓ Vitamin C
(c) Vitamin K (d) Vitamin D

27. After drinking contaminated water, you would be most apt to develop symptoms of:
(a) Malaria
(b)✓ Typhoid fever
(c) Yellow fever
(d) Schistosomiasis

28. Dialysis is used in the case of a patient suffering from:
(a) Heart problems
(b)✓ Kidney problems
(c) Respiratory diseases
(d) Neurological disorders

29. Which of the following medicines is administered to patients suffering from diabetes?
(a) Penicillin (b)✓ Insulin
(c) Sulpha drugs
(d) Streptomycin

30. Which of the following acids, secreted internally, helps in digestion?
(a) Sulphuric (b) Citric
(c)✓ Hydrochloric
(d) Acetic

31. The most abundant bio-molecule on the earth:
(a) Nucleic acids

(b) Proteins
(c) Lipids
(d)✓ Carbohydrates

32. The major functions of carbohydrates include:
(a) Structural framework
(b) Storage
(c)✓ (a) & (b) (d) None of these

33. The general formula of carbohydrate is:
(a)✓ $(CH_2O)n$ (b) $(C_4H_2O)n$
(c) $(C_6H_2O)n$
(d) $(C_2H_2O)n\ COOH$

34. Carbohydrates are:
(a) Polyhydroxy aldehydes and phenols
(b)✓ Polyhydroxy aldehydes and ketones
(c) Polyhydroxy ketones and phenols
(d) Polyhydroxy phenols and alcohols

35. Nutritional polysaccharides are:
(a)✓ Starch and glycogen
(b) Starch and chitin
(c) Starch and cellulose
(d) Starch and glucose

36. Glycogen in animals are stored in:
(a)✓ Liver and spleen
(b) Liver and muscles
(c) Liver and bile
(d) Liver and adipose tissue

37. Carbohydrates accounts:
(a) 30% in plants and 20% in animals
(b) 30% in plants and 10% in animals
(c)✓ 30% in plants and 1 % in animals
(d) 50% in plants and 50% in animals

38. Deficiency of which during pregnancy is associated with birth defects, such as neural tube defects:
(a)✓ Vitamin B_9 (b) Vitamin B_5
(c) Vitamin B_3 (d) Vitamin B_6

39. Which Vitamin deficiency results in spontaneous bleeding?
(a) Vitamin D (b)✓ Vitamin K
(c) Vitamin C (d) Vitamin B

40. Which of the following is caused by a Vitamin-A deficiency?
(a) Edema (b) Anemia
(c)✓ Night blindness
(d) Rickets

41. Which has maximum protein?
(a)✓ Ground nut
(b) Cow milk
(c) Egg (d) Wheat

42. Amino acids are a product of the digestion of:
(a) Carbohydrates
(b) Fats
(c)✓ Proteins (d) Vitamins

43. Which of the following foods (one ounce of edible raw portion of each) provides the largest number of Kcal of energy?
(a) Cheese (b) Meat
(c)✓ Margarine (d) Wheat

44. Lack of essential amino acids in diet can cause disease such as:
(a)✓ Kwashiorhar
(b) Rickets
(c) Scurvy (d) Diabetes

45. Which are not the essential constituents of balanced diet?
(a) Carbohydrates
(b) Fats
(c) Vitamin (d)✓ Hormones

46. Hair, finger nails, hoofs etc. are all made of:
(a) Fat (b) Vitamins
(c)✓ Proteins (d) Iron

47. In which form glucose is stored in the liver:
(a) Lactic acid (b) Lactose
(c) Ribose (d)✓ Glycogen

48. Substances which bring down the body temperature are known as:
(a)✓ Antipyretics
(b) Analgesics
(c) Antibiotics
(d) None of these

49. Antibodies are:
(a) Carbohydrates
(b) Enzymes
(c)✓ Proteins (d) Hormones

50. A balanced diet contains:
(a) Animal protein
(b) Macro and micro nutrients
(c)✓ Food nutrients for growth and maintenance
(d) Butter and Ghee

1. Which one of the following would give the highest energy per gram?
(a) Glucose (b) Proteins
(c)✓ Fats (d) Sucrose

52. Mother's milk is preferred to cow's milk because it contains:
(a) More fats and more lipids
(b)✓ Less fats and less lipids
(c) More lipids and less fats
(d) More fats and less lipids

53. Man cannot survive without taking minimum amount of:
(a) Carbohydrates
(b) Fats
(c)✓ Proteins (d) Minerals

54. Smallest carbohydrates are trioses. Which of the following is a triose?
(a) Glucose (b) Ribulose
(c) Ribose
(d)✓ Glyceraldehydes

55. Which of the following is a reducing sugar?
(a)✓ Glucose
(b) Dihydroxy acetone
(c) Erythulose
(d) None of these

57. Sucrose is a:
(a) Polysac and fructose
(b)✓ Glucose and glactose
(c) Glucose and sucrose
(d) Glucose and ribose

58. Nitrogen occur in animals in the form of:
(a) Minerals (b) Fats
(c) Carbohydrastes
(d)✓ Proteins

59. The unit of energy produced by food in the human body is called:
(a) Watt (b) DNA
(c)✓ Calorie (d) Ampere

60. Proteins are made of:
(a) Sugar (b) Fatty acid
(c) Nucleic acid
(d)✓ Amino acid

61. The acid commonly present in lemon and grapefruit is:
(a) Lactic acid (b)✓ Citric acid
(c) Ascorbic acid
(d) Tartaric acid

62. Water helps in the metabolism process in the presence:
(a) Amino acids
(b) Ribonucleic acid
(c) Proteins (d)✓ Enzymes

63. An adult requires how many proteins daily:
(a) 10 – 20 grams
(b) 30 – 50 grams
(c)✓ 50 – 100 grams
(d) More than 100 grams

64. Proteins are required to make which of the followings:
(a) Antibodies
(b) Connective tissues
(c) Hormones (d)✓ All of these

65. Lipids are obtained from:
(a) Animal sources
(b) Plant sources
(c)✓ Both plant and animal sources
(d) Synthetically

66. The proteins are made in the cells under the instructions of:

(a)✓ Genes (b) DNA
(c) RNA (d) Ribosome

67. Which of the following sets contains foods rich in carbohydrates?
(a) Potato, ghee and cucumber
(b) Wheat, ghee and spinach
(c)✓ Banana, potato and rice
(d) Rice, lemon and mustard

68. Which is an essential constituent of diet?
(a)✓ Starch (b) Glucose
(c) Amino acid
(d) Carbohydrates

69. The muscles, tissues and blood all are made up of:
(a) Carbohydrates
(b)✓ Protein
(c) Vitamins (d) Fats

70. Which one of the following units represents the largest amount of energy?
(a)✓ Calorie (b) Joule
(c) Erg
(d) Electron volt

71. Which of the following gives maximum energy in metabolic process?
(a) Proteins
(b) Carbohydrates
(c) Vitamins (d)✓ Fats

72. Hemoglobin in the blood is a complex protein rich in:
(a) Copper (b) Gold
(c)✓ Iron (d) Silver

73. Which of the following Vitamins is not stored in the liver?
(a) Vitamin A (b) Vitamin B
(c)✓ Vitamin C (d) Vitamin D

74. Which of the following is considered as vitamin complex?
(a) Vitamin A (b)✓ Vitamin B
(c) Vitamin K (d) Vitamin E

75. Which vitamin is also known as "Ascorbic Acid"?
(a) Vitamin D (b)✓ Vitamin C
(c) Vitamin E (d) Vitamin K

76. Extremely high doses of which vitamin could damage the kidney and causes of kidney stone:
(a) Vitamin K (b) Vitamin D
(c)✓ Vitamin C (d) Vitamin A

77. Which vitamin cannot store in human body?
(a) Vitamin K (b) Vitamin D
(c)✓ Vitamin C (d) Vitamin A

78. Which of the following vitamins is essential for the coagulation of blood?
(a) Vitamin A (b) Vitamin B_{12}
(c)✓ Vitamin K (d) Vitamin D

79. Deficiency of vitamin causes sterility:
(a) Vitamin K (b)✓ Vitamin E
(c) Vitamin A (d) Vitamin D

80. Which Vitamin deficiency leads to scurvy?
(a) Vitamin B (b) Vitamin K
(c)✓ Vitamin C (d) Vitamin E

81. Which milk contains more fat?
(a) Cow (b) Buffalo
(c) Camel (d)✓ Reindeer

82. The protein content in wheat is approximately:
(a) 8% (b) 8%
(c)✓ 16% (d) 12%

83. Oranges are rich source of:
(a) Carbohydrates
(b) Fats
(c) Proteins (d)✓ Vitamins

84. Which vitamin is known as skin food?
(a) Vitamin B (b)✓ Vitamin C
(c) Vitamin A (d) Vitamin D

85. Deficiency of vitamin ______ causes night blindness:
(a) Vitamin K (b) Vitamin C
(c)✓ Vitamin A (d) Vitamin D

86. Deficiency of vitamin ______ causes teeth disease:
(a) Vitamin K (b)✓ Vitamin C
(c) Vitamin B (d) Vitamin D

87. Which vitamin is also known as "Retinol"?
(a) Vitamin K (b)✓ Vitamin A
(c) Vitamin B (d) Vitamin D

88. Pepsin is secreted by
(a)✓ Zymogene cells of stomach
(b) Zymogene cells of duodenum
(c) Paneth cells
(d) None of these

89. The deficiency marasmus in children is caused by due to the deficiency of:
(a) Fats
(b) Carbohydrates
(c)✓ Proteins (d) Vitamins

90. Starch is converted into maltase by the action of:
(a) Invertase (b)✓ Amylase
(c) Sucrose (d) Maltase

91. The enzyme trypsin is found in:
(a)✓ Pancreatic juice
(b) Saliva
(c) Bile juice
(d) Intestinal juice

92. Crypts of Lieberkuhri is an example of:
(a)✓ Simple tubular gland
(b) Coiled tubular gland
(c) Simple, alveolar gland
(d) Compound alveolar gland

93. During fasting, in what sequence, that are the following organic compound used up by the body?
(a) First fats, next carbohydrates and lastly proteins
(b) First carbohydrates, next proteins and lastly lipids
(c) First proteins, next lipids and lastly carbohydrates
(d)✓ First carbohydrates, next fats and lastly proteins

94. The principal action of enter peptidase is only to, activate – of the pancreatic juice:
(a) Amino peptidase
(b)✓ Trypsinogen
(c) Trpsin
(d) Chymotrypsin

95. Enteropeptidase enzyme present in:
(a) Saliva
(b) Gastric juice
(c)✓ Intestinal juice
(d) Pancreatic juice

96. Milk Sugar is:
(a)✓ Lactose (b) Fructose
(c) Maltose (d) Sucrose

97. Stomach of camel does not have:
(a) Rumen (b) Reticulam
(c)✓ Omasum (d) Abomasums

98. The digestion of by amylase is completed in the:
(a) Mouth (b)✓ Duodenum
(c) Ileum (d) Stomach

99. The term used for the food or any substance that supplies the body with elements necessary for metabolism:
(a) Health (b)✓ Nutrient
(c) Food (d) All of these

100. Which of the following tests helps in diagnosis of cancer?
(a) X-ray (b) Urine test
(c) Blood test (d)✓ Biopsy test

101. The protein content of edible portion of egg is:
(a) 15% (b)✓ 13.3%
(c) 10.3% (d) 5%

102. The protein content in wheat is approximately:
(a) 6% (b) 8%
(c)✓ 12% (d) 16%

103. Which one of the following descending order of items by their fat content?
(a) Egg yolk, butter, cheese, cream, milk
(b) Butter, ghee, cheese, egg yolk, cream
(c) Cream, cheese, condensed milk, egg (whole), cow milk

(d)✓ Ghee, butter, egg yolk, cheese, condensed milk

104. Which of the following minerals plays an important role in preventing dental decay?
(a) Sodium (b) Iodine
(c)✓ Iron (d) Fluorine

105. Among the following, which food Item contains the maximum quantity of carbohydrate as:
(a) Apples (b) Potato
(c)✓ Bread (d) Cooked rice

106. Two rickets known sources of edible protein are:
(a) Meat and eggs
(b) Milk and vegetables
(c) Soybean and groundnut
(d)✓ Some algae and other micro organisms

107. Fluorine is present in:
(a)✓ Seafood
(b) Common salt
(c) Green vegetables
(d) Drinking water

108. Carbohydrates, fats & proteins are essential for:
(a) Metabolic processes of an organism
(b) Providing energy
(c) Formation of structures
(d)✓ All of these

109. Of the following, which one has more variety of nutrition?
(a)✓ Animals (b) Bacteria
(c) Plants (d) Fungi

110. Fat is a:
(a)✓ Lipid (b) Protein
(c) Amino acid
(d) Ether

111. Due to the protein deficiency if symptoms like thin limbs, related growth of body and brain, edema, diarrhea etc. develop, then the disease is called:
(a) Pellagra (b)✓ Kwashiorkor
(c) Marasmus (d) Anemia

112. Brunner's gland are found in:
(a) Stomach (b) Ileum
(c)✓ Duodenum (d) Rumen

113. Kuffercells are found in:
(a) Kidney (b)✓ Liver
(c) Blood (d) Heart

114. Which of the following is most important for the growth of children up to the age of 14?
(a)✓ Protein (b) Vitamin
(c) Fat (d) Milk

115. Meat is a good source of:
(a)✓ Protein (b) Vitamin
(c) CHO (d) Chlorophyll

116. Which is the main source of energy for human brain?
(a) Fats (b)✓ Glucose
(c) Vitamins (d) Protein

117. The enzyme trypsin is found in:
(a)✓ Pancreatic juice
(b) Saliva
(c) Bile juice
(d) Intestinal juice

118. Highly branched chains of glucose units result in
(a) Starch (b)✓ Glycogen
(c) Cellulose (d) Galactose

119. Prevention of heat is attributed to the:
(a) Rate of digestion
(b) Rate of reaction
(c)✓ Rate of heat production
(d) Rate of heat gained

120. Diabetic people need to:
(a) Increase water intake
(b)✓ Reduce water intake
(c) Eliminate any physical activity
(d) Enhance any physical activity

========

METABOLISM & NUTRITIONAL PHYSIOLOGY

Answer the correct one:

1. Prolonged fasting and diabetes mellitus lead to:
   - (a) Increased gluconeogenesis
   - (b) Ketonemia
   - (c) A negative nitrogen balance
   - (d) All of the above
   - (e) Hyperglycemia
2. Which one of the following statements is correct?
   - (a) About 100 mg of iron is absorbed per day
   - (b) Iron is absorbed rapidly from the small intestine
   - (c) Iron is transported in the blood bound to transferring
   - (d) In general, iron must be oxidized from the ferrous to the ferric state for efficient absorption
   - (e) Iron absorption is a passive process regulated by plasma iron levels
3. The uptake of triglycerides into adipose tissue from plasma lipoproteins:
   - (a) Is regulated by the activity of lipoprotein lipase
   - (b) Is increased by catecholamines
   - (c) Is decreased by glucose
   - (d) Is decreased by insulin
   - (e) Requires receptor-mediated endocytosis
4. Loss of body heat is:
   - (a) Accomplished chiefly through radiation and water evaporation
   - (b) Accomplished chiefly through warming of inspired air and heat less through urine and feces
   - (c) Controlled by thermoregulatory center in the medulla
   - (d) Independent of environmental conditions
   - (e) Independent of neural control
5. Which one of the following i associated with prolonged fasting (or more days)?
   - (a) Decreased lipolysis
   - (b) Increased urinary excretion o nitrogen
   - (c) Decreased gluconeogenesis
   - (d) Increased glucose utilization b the brain
   - (e) Increased secretion of insulin
6. Gluconeogenesis in the liver decreased by:
   - (a) Epinephrine
   - (b) Glucagon
   - (c) Thyroxin
   - (d) All of the above
   - (e) Insulin
7. The molecule that serves as the majo source of readily available fuel f neurons and blood cells is ________.
   - (a) Fat (b) glucose
   - (c) Acetyl CoA (d) cellulose
8. Which of the choices below is not fate of carbohydrate taken into th body?
   - (a) ATP production
   - (b) Lipogenesis
   - (c) Amino acid synthesis
   - (d) Conversion to a nucleic acid
   - (e) Glycogenesis
9. Dietary fats are important becau they ________.
   - (a) Keep blood pressure normal
   - (b) Help the body absorb f soluble vitamins
   - (c) Contribute significantly to t health of the skin
   - (d) Help prevent the common col

Answers

1.	(d)	2.	(c)	3.	(a)	4.	(
5.	(c)	6.	(e)	7.	(b)	8.	(
9.	(b)						

VITAMINS AT A GLANCE

Vitamin is vital to life. A very small quantity of vitamin is needed for maintaining good health. However, if vitamins are not present in sufficient quantities in the diet, vitamin deficiency diseases occur. Only a hundred years ago, scientists found the vitamins in fresh food.

Plants synthesize various vitamins in their body. Green leaves of plants are the main sources of vitamins. It is also found in trunks, flowers, fruits and roots of trees. Man and other animals are directly dependent on plants. The herbivorous animals are also good source of vitamins for man. Animals store vitamins in liver, muscles, and other parts of the body. Cows store vitamins in milk and ducks store in eggs for meeting their need for future off springs.

Classification of vitamin: So far about fifteen different vitamins have been isolated in a pure state from natural foods. Almost all of them are essential for human beings.

Vitamins may be classified broadly into two groups:

(a) Fat soluble vitamins i.e., vitamins that are soluble in fats and fat solvents but insoluble in water.

Fat soluble vitamins are:

1. Vitamin-A and carotenes,
2. Vitamin-D
3. Vitamin-E
4. Vitamin-K

(b) Water soluble vitamins i.e., vitamins that are soluble in water but insoluble in fats and fat solvents.

Water soluble vitamins are:

1. Thiamine (Vitamin-B1)
2. Riboflavin (Vitamin-B2)
3. Niacin and Niacin amide
4. Pyridoxine (Vitamin-B6)
5. Pantothenic acid
6. Folic acid
7. Vitamin-B12
8. Ascorbic acid or civitamic acid.

General functions of vitamin: Vitamins play very important role in animal body. Vitamins are associated with various functions of the body. The functions vary widely but may be generalized as follows-

1. They are essential for growth.
2. They help to maintain good health and vigour during growing stage.
3. They help in keeping normal digestion.
4. They help in utilization of minerals in the body.
5. They help in metabolism of every produced nutrient
6. They are essential for strengthening the nervous system.
7. They protect the body against infections.
8. They are essential for normal and healthy productive system.

Vitamin-A

In 1913 Mccollum and Davis discovered Vitamin-A. Vitamin-A is insoluble in water but soluble in fat. Ordinary cooking does not destroy Vitamin A but over cooking does, because it is easily destroyed by air and light during cooking.

Sources: Vitamin A is found in both animal and plant sources. Animal sources such as-milk, eggs, butter etc, contain Vitamin A, but plant sources contain pro-vitamin A which is converted into vitamin A in the human body. Carotene, a precursor of vitamin A is found in all yellow, orange and chlorophyll containing compounds. Carotene is converted into Vitamin A in the body. Cod liver oil, liver, ghee, egg, cheese etc. contain large amounts of Vitamin A and carrots, pumpkins, ripe mangoes, dark green leaves, maize, ripe tomatoes, ripe papayas etc. contain large amounts of pro-vitamin-A.

Functions of vitamin-A:

1. The retina of the eyes contain photosensitive cells of rhodesian and iodeosin, which help vision in both dim and bright light, Vitamin A is an integral part of such cells and helps in normal vision.
2. Vitamin A is essential for the health of the epithelial tissues of skin, and kidney.
3. It helps to prevent dental decay.
4. It helps to form strong bones and teeth.
5. It helps in normal reproduction.
6. Vitamin A also helps in the digestion of carbohydrates.

Requirements: 750μg retinol of vitamin A and 4500μg of carotene are required for boys, adult males and females and pregnant mothers. Requirement for lactating mother is 1200μg retinol of vitamin A and 7200μg of carotene.

Vitamin-D

Fat soluble vitamin D is sometimes called the anti-rachitic vitamin. The term rachitic denotes the condition of a person affected with vitamin D deficiency disease called rickets. It is also called the disease of poor children. The scientists demonstrated that cod liver oil contains vitamin D. The other name of this vitamin is cholecalciferol.

Sources: Liver oil of seafish such as, Cod, Halibut, Shark etc, animal fat, liver, milk butter, ghee, egg yolk are good sources of this vitamin. Vitamin D is not present in foods of vegetable origin. Ultra violet ray of sunlight converts the cholesterol in the skin into vitamin D.

Functions:

(1) Vitamin D helps in the absorption and utilization of calcium and phosphorus in the body.

(2) It promotes strong bones and teeth formation by properly utilizing calcium and phosphorus.

Deficiency:

(1) Delayed dentition and ability to walk is seen.

(2) Calcium and phosphorus of food are not properly utilized

(3) In vitamin D deficiency, calcification of bone does not take place. This results in the disease called rickets in vitamin D deficient infants and children. In this disease the head is usually enlarged, elongated and box like. Skeletal malformations occur because of the inability of soft bones to withstand the stress of body weight.

Recommended allowance of vitamin D (Daily allowances in International Unit)

New born child and pre-school child = 10μg or 400 IU
Adolescents and adults = 5μg or 200 IU
Pregnancy and Lactation = 10μg or 400 IU

In tropical countries a lower quantity than the above recommended intake can be taken because the skin is exposed to sunlight for a considerable period of the day.

Vitamin-E

Vitamin E is a fat soluble vitamin. The biochemical name of vitamin-E is Tocopherol.

Sources: Cod liver oil, ground nut, wheat, oat, sunflower seed oil, soyabean oil, palm oil, germinated gram, wheat germ, eggs etc. are sources of vitamin E.

Functions:

1. It is an active antioxidant, preventing oxidation of carotene, vitamin A and unsaturated fatty acids.
2. It is required for normal reproductive function in animals and it prevents sterility in them.

Requirements: An average adult diet contains enough vitamin-E. The daily allowance is 5-10mg.

Deficiency: Vitamin E deficiency in animals causes reproductive failure.

Vitamin-K

The scientist Dam discovered this vitamin between the years 1910 and 1935. Vitamin K. is another important vitamin which is soluble in fat. It is also known as anti bleeding or coagulation substance. More than half of the human requirement of vitamin K is met from the synthesis by bacteria in the lower intestinal tract of the human body. So a deficiency of vitamin K is not normally seen.

Sources: Green leaves cauliflower, cabbage, lettuce, spinach, egg yolk, beef liver etc. are good sources of vitamin K.

Functions:

1. Promotes proper blood clotting after cuts or surgery and thus prevents bleeding.
2. It helps in energy producing reactions of the body.

Deficiency:

1. Vitamin K deficiency leads to lowering of prothrombin (a protein that helps to form blood clot) level and increased clotting time of blood. This helps the hemorrhagic condition.
2. Lack of bile secretion occurs due to deficiency of vitamin K.

Requirement: The requirement of vitamin K for adult is 40 micrograms per day and for pregnant woman is 1mg per day.

Vitamin-B

Vitamin B is not a single vitamin. Vitamin B complex comprises of 15 chemical substances. It has been established that eight of these are required by human body.

These are--

1. Thiamine (B_1),
2. Riboflavin (B_2),
3. Nicotinic acid,
4. Folic acid,
5. Pyridoxine (B_6),
6. Cyarocobalamine (B_{12}),
7. Biotin and pantothenic acid.

These all B Vitamins are water soluble and can be destroyed by heat.

Thiamine or B_1 Thiamine or B1 prevents beriberi; and so it is called antiberiberi vitamin.

Sources: Rice polishing (parboiled), wheat, oats, liver, egg, yeast, fish, milk, green pea, soybean, peanut, pulses, wheat germ, germinated gram, etc. are good sources of thiamine.

Functions:

1. It plays an important role in energy production from the metabolism of carbohydrate.
2. It is necessary for energy production from fat and protein metabolism.
3. It helps in normal growth of human body.

Requirement: The daily requirement of thiamine is 0.5 mg per 1000 calorie demand.

Deficiency:

1. The symptoms of thiamine deficiency include weakness, loss of appetite, nausea and mental instability. These defects happen because of diminished utilization of carbohydrate and production of energy.
2. Severe deficiency of thiamine produce causes beriberi.

Riboflavin (B_2): This water soluble vitamin is stable to heat; so it is not destroyed by heat. However, it is sensitive to light.

Sources: Good sources of riboflavin include dark green leafy vegetables, fruits, whole grains and cereals, liver, dried yeast, egg yolk, milk, fish, meat, pulses, nuts etc.

Functions:

1. It functions with other substances to metabolize carbohydrates, fats and proteins fo the release of energy from food.
2. It is necessary for growth and good health.

Requirements: Riboflavin requirement is 0.6mg per 1000 cal.

Deficiency: A deficiency of riboflávin does not cause any disease, but the symptom include cracking at lip corners, sore tongue, loss of hair, eye problems etc.

Folic Acid: The other name of this vitamin is Folacin.

Sources: Liver, yeast, peanuts, pulses, gram, rice, wheat, green leafy vegetables, kidne etc. are good sources of folic acid.

Functions:

1. If helps in the metabolism of protein.
2. It is vital for the formation of red blood cells.

Requirements:

Infant = 100mg Pregnant mother = 400mg
Adult (female) = 200mg Lactating mother = 300mg.

Deficiency: The most important deficiency symptom in girls and in pregnant women i the development of a kind of anemia, which is called megaloblastic anemia.

Niacin: Niacin which includes two other substances called nicotinic acid an nicontinamide, is a water soluble vitamin. Niacin is not destroyed by heat, acid, alkali, light an oxidation.

Sources: Niacin is found in meat, liver, wheat, pulses, nuts, oil seeds, gram and gree leafy vegetables. It is also formed by the conversion of amino acid tryptophan. Tryptoph present in the dietary protein is converted into niacin in the human body. It has been estimat that 60mg of tryptophan yield 1 mg niacin.

Functions:

1. It helps in carbohydrate metabolism and in fat synthesis from carbohydrate an protein.
2. It prevents the disease pellagra.

Deficiency: Pellagra, is the deficiency disease caused by the lack of sufficient niacin the diet. The symptoms of this condition is generally known as the disease of three D's i dermatitis, diarrhoea, and dementia. Deficiency of niacin is weakness, headache, loss of weig loss of appetite, indigestion and eczema like skin disease on exposed surfaces.

Requirements:

Adult male - 18.2 mg
Adult female - 13.2 mg
Pregnant woman - 15.1 mg and
Lactating woman - 18.1 mg

Vitamin-C

Vitamin C is a water soluble substance with a sour (acid) taste. It is easily destroyed oxygen and heat. Vitamin C is not stored in the human body. So it is essential to take Vitamin daily. It prevents scurvy. So it is also called antiscorbutic vitamin.

Sources: Citrus fruits and fresh vegetables contain large amounts of vitamin C. Amlak guavas, oranges, lemons, starfruits, pineapples, black berries, tomatoes, green peppers, contain large amount of vitamin C. Germinated seeds, lettuce and other green leaves also contain Vitamin-C.

Functions:

1. It helps in keeping normal and healthy gums and teeth.
2. It speeds up healing of wounds after surgery of injury.
3. It helps in the metabolism of carbohydrate, protein and fat.
4. It helps the body to build and maintain a protein-collagen necessary for strengthening connective tissues.
5. It helps the body to maintain normal and healthy skin.
6. It helps in preventing many types of infectious diseases.

Requirements:

Children - 20 mg
Adult - 30 mg
Pregnant and lactating mother - 50 mg

Deficiency: The disease scurvy is produced by prolonged deficiency of Vitamin-C.

Water: Water is a vital element for all animals. About 70 percent of the total body weight consists of water. Almost every part of body like blood, tissues, nerves, teeth, bones contain large amounts of water.

Sources: Almost all foods contain some water. Liquid diet or different types of drinks such as - milk, lassi, sherbet, tea, coffee, fruit juice, soup, sugar cane juice, coconut water, etc. contain large amount of water. Other soft or solid diets also contain water.

Functions:

1. It helps to regulate and integrate different types of functions of the body.
2. It works as an essential medium for excreting waste products through urine, faeces and sweat.
3. Water takes part in all metabolic processes and is essential for digestion. It prevents constipation.
4. It maintains the normal concentration of blood and works as a transport medium for transporting the essential elements. It also helps in the regulation of body temperature and keeps the body healthy.

Requirements: The amount of water lost through urine, sweat and faeces should be replaced to maintain a water balance. The total water requirement of an adult under ordinary condition is about 2 litres.

Deficiency: Deficiency of water increases concentration of blood. As a result, muscle weakness and nerve weakness, problems in digestion of food occur. Water deficiency leads to thirst and low blood pressure and increase body temperature.

Animal and Plant Sources of all Nutrients

Name of Nutrient	Animal Source	Plant Source Protein
Protein	Milk, milk products, fish, hen, duck, bird's meat, eggs, beef and mutton	Pulses, nuts, peas, seeds, soyabean, etc.
Fat	Ghee, butter, fats, fish oil	Marzarine, Vanaspati, oilseeds, oil (mustard, soyabean, corn, coconut, palm, almond)
Carbohydrate	Honey, meat, milk	Rice, wheat flour, flour, flattened rice, puffed rice, pop corn, sugar, molasses, fruits, potatoes, carrots, beet sugar

		cane.
Minerals: Calcium	Milk, curd, cheese, eggs, fish, meat.	Cereals, nuts, dates, green leafy vegetables and fruits.
Phosphorus	Milk, meat, liver, fish, egg	Nuts, cauliflower, vegetables.
Iodine	Seafish, milk and meat of animals of coastal areas.	Vegetables and fruits which grow in sea coast area.
Iron	Liver, egg yolk, fish, meat.	Dark green and leafy vegetables, molasses, whole grain, legumes, dried fruits.
Sodium	Salted fish, cheese, canned meat, butter, milk.	Puffed rice, fruits, pulses, vegetables etc.
Potassium	Egg, meat, poultry, fish, cheese.	Coffee, coca, whole grain, cereals, leafy vegetables, legumes, orange, bananas etc.
Thiamine (B_1)	Liver, meat, milk, dairy foods, eggs.	whole grain, nuts, legumes, soyabeans, yeast, peas, etc.
Riboflavin (B_2)	Milk, dairy foods, meat, eggs, liver.	Whole grain cereals, green, leafy vegetables, yeast grams, nuts, pumpkin, etc.
Pyridoxine and folic acids	Liver, egg yolk	Wheat, corn, yeast
Niacin and nicotinamide	Fish, meat, liver	Pulses, nuts, yeast
Vitamin A and carotene	Code-liver oil, liver, egg, butter, ghee, milk, cheese	Carrots, pumpkin, mangoes, dark green vegetables, tomatoes, ripe papaya etc.
Ascorbic acid or vitamin C	Milk and meat contain small amount but they are destroyed by heat during cooking.	Lemons, oranges, tomatoes, lettuce, pine apples, green pepper, citrus, fruits, guavas
Vitamin D	Fish oil and liver, animal liver, oil fish, cod-liver oil, egg yolk	Olive-oil
Vitamin K	Egg yolk, fish, liver	Lettuce, green leafy vegetables, cauliflower, cabbage, tomatoes, soyabeans

NUTRITION AND HEALTH CARE

(REVIEW)

Write the correct answer:

1. The most abundant bio molecule on the earth:
(a) Nucleic acids
(b) Proteins
(c) Lipids
(d) Carbohydrates

2. The major functions of carbohydrates include:
(a) Structural framework
(b) Storage
(c) Both (a) and (b)
(d) None of these

3. The general formula of carbohydrate is:
(a) $(CH_2O)n$ (b) $(C_4H_2O)n$
(c) $(C_5H_2O)n$
(d) $(C_2H_2O)n\ COOH$

4. Carbohydrates are:
(a) Polyhydroxy aldehydes and phenols
(b) Polyhydroxy aldehydes and ketones
(c) Polyhydroxy ketones and phenols
(d) Polyhydroxy phenols and alcohols

5. Nutritional polysaccharides are:
(a) Starch and glycogen
(b) Starch and chitin
(c) Starch and cellulose
(d) Starch and glucose

6. Glycogen in animals are stored in:
(a) Liver and spleen
(b) Liver and muscles
(c) Liver and bile
(d) liver and adipose tissue

7. Carbohydrates accounts:
(a) 30% in plants and 20% in animal
(b) 30% in plants and 10% in animals
(c) 30% in plants and 1% in animals
(d) 50% in plants and 50% in animals

8. Deficiency during pregnancy is associated with birth defects, such as neural tube defects:
(a) Vitamin B_9 (b) Vitamin B_5
(c) Vitamin B_3 (d) Vitamin B_6

9. Which Vitamin deficiency results; in spontaneous bleeding?
(a) Vitamin D (b) Vitamin K
(c) Vitamin C (d) Vitamin B

10. Which of the for lowing is caused by a Vitamin A deficiency?
(a) Edema (b) Anemia
(c) Night blindness
(d) Rickets

11. Which has maximum protein?
(a) Ground nut
(b) Cow milk
(c) Egg (d) Wheat

12. Amino acids are a product of the digestion of:
(a) Carbohydrates
(b) Fats
(c) Proteins (d) Vitamins

13. Which of the following foods (one ounce of edible raw portion of each) provides the largest number of K cal of energy?
(a) Cheese (b) Meat
(c) Margarine (d) Wheal

14. Lack of essential amino acids in diet can cause disease such as:
(a) Kwashiorhar
(b) Rickets
(c) Scurvy (d) Diabetes

15. Which are not the essential constituents of balance d diet?
(a) Carbohydrates
(b) Fats
(c) Vitamins (d) Hormones

16. Hair, finger nails, hoofs etc, are all

made of?
(a) Fat (b) Vitamins
(c) Proteins (d) Iron

17. In which form glucose is stored in the liver?
(a) Lactic acid (b) Lactose
(c) Ribose (d) Glycogen

18. Substances which bring down the body temperature are known as?
(a) Antipyretics
(b) Analgesics
(c) Antibiotics (d) None of these

19. Antibodies are?
(a) Carbohydrates
(b) Enzymes
(c) Proteins (d) Hormones

20. A balanced diet contains:
(a) Animal protein
(b) Macro and micro nutrients
(c) Food nutrients for growth and maintenance
(d) Butter and ghee

21. Which one of the following would give the highest energy per gram?
(a) Glucose (b) Proteins
(c) Fats (d) Sucrose

22. Mother's milk is preferred to cow's milk because it contains:
(a) More fats and more lipids
(b) Less fats and less lipids
(c) More lipids and less fats
(d) More fats and less lipids

23. Man cannot survive without taking minimum amount of:
(a) Carbohydrates
(b) Fats
(c) Proteins (d) Minerals

24. Smallest carbohydrates are trioses. Which of the following is a triose?
(a) Glucose (b) Ribulose
(c) Ribose
(d) Glyceraldehydes

25. Which of the following is a reducing sugar:
(a) Glucose
(b) Dihydroxyacetone
(c) Erythulose (d) None of these

26. Sucrose is a:
(a) Monosaccharide
(b) Disaccharide
(c) Polysaccharide
(d). Triose

27. Lactose is a disaccharide consists of:
(a) Glucose and fructose
(b) Glucose and galactose
(c) Glucose and sucrose
(d) Glucose and ribose

28. Nitrogen occur in animals in the form of:
(a) Minerals (b) Fats
(c) Carbohydrastes
(d) Proteins

29. The unit of energy produced by food in the human body is called:
(a) Watt (b) DNA
(c) Calorie (d) Ampere

30. Proteins are made of:
(a) Sugar (b) Fatty acid
(c) Nucleic acid
(d) Amino acid

31. The acid commonly present in lemon and grapefruit is:
(a) Lactic acid (b) Citric acid
(c) Ascorbic acid
(d) Tartaric acid

32. Water helps in the metabolism process in the presence of:
(a) Amino acids
(b) Ribonucleic Acid
(c) Proteins (d) Enzymes

33. An adult requires how many proteins daily:
(a) 20 - 20 grams
(b) 30 - 50 grams
(c) 50 -100 grams
(d) More than 100 grams

34. Proteins are required to make which of the followings:
(a) Antibodies
(b) Connective tissues
(c) Hormones (d) All of these

35. Lipids are obtained from:

(a) Animal sources
(b) Plant sources
(c) Both plant and animal sources
(d) Synthetically

36. The proteins are made in the cells under the instructions of:
(a) Genes (b) DNA
(c) RNA (d) Ribosome

37. Which of the following sets contains foods rich in carbohydrates?
(a) Potato, ghee and cucumber
(b) Wheat, ghee and spinach
(c) Banana, potato and rice
(d) Rice, lemon and mustard oil

38. Which is an essential constituent of diet?
(a) Starch (b) Glucose
(c) Amino acid
(d) Carbohydrates

39. The muscles, tissues and blood all are made up of:
(a) Carbohydrates
(b) Proteins
(c) Vitamins (d) Fats

40. Which one of the following units represents the largest amount of energy?
(a) Calorie (b) Joule
(c) Erg (d) Electron volt

41. Which of the following gives maximum energy in metabolic process?
(a) Proteins
(b) Carbohydrates
(c) Vitamins (d) Fats

42. Hemoglobin in the blood is a complex protein rich in:
(a) Copper (b) Gold
(c) Iron (d) Silver

43. Which of the following Vitamins is not stored in the Liver?
(a) Vitamin A (b) Vitamin B
(c) Vitamin C (d) Vitamin D

44. Which of the following is considered as vitamin complex?
(a) Vitamin A (b) Vitamin B
(c) Vitamin K (d) Vitamin E

45. Which vitamin is also known as "Ascorbic Acid"?
(a) Vitamin D (b) Vitamin C
(c) Vitamin E (d) Vitamin K

46. Extremely high doses of which vitamin could damage the kidney and causes of kidney stone:
(a) Vitamin K (b) Vitamin D
(c) Vitamin C (d) Vitamin A

47. Which vitamin cannot store in human body?
(a) Vitamin K (b) Vitamin D
(c) Vitamin C (d) Vitamin A

48. Which of the following vitamins is essential for the coagulation of blood?
(a) Vitamin A (b) Vitamin B_{12}
(c) Vitamin K (d) Vitamin D

49. Deficiency of vitamin- causes Sterility?
(a) Vitamin K (b) Vitamin E
(c) Vitamin A (d) Vitamin D

50. Which Vitamin deficiency leads to scurvy?
(a) Vitamin B (b) Vitamin K
(c) Vitamin C (d) Vitamin E

51. Which milk contains more fat?
(a) Cow (b) Buffalo
(c) Camel (d) Reindeer

52. The protein content in wheat is approximately:
(a) 10% (b) 15%
(c) 16% (d) 20%

53. Oranges are rich source of:
(a) carbohydrates
(b) Fats
(c) Proteins (d) Vitamins

54. Which vitamin is known as skin food?
(a) Vitamin B (b) Vitamin C
(c) Vitamin A (d) Vitamin D

55. Deficiency of vitamin ______ causes night blindness:
(a) Vitamin K (b) Vitamin C
(c) Vitamin A (d) Vitamin D

56. Deficiency of vitamin ______ causes teeth disease:

(a) Vitamin K (b) Vitamin C
(c) Vitamin B (d) Vitamin D

57. Which vitamin is also known as "Retinol"?
(a) Vitamin K (b) Vitamin A
(c) Vitamin B (d) Vitamin D

58. Enteropeptidase enzyme present in:
(a) Saliva (b) Gastric juice
(c) Intestinal juice
(d) Pancreatic juice

59. Due to the protein deficiency if symptoms like thin limbs, related growth of body and brain, Oedema. diarrhea etc., develop, then the disease is called:
(a) Pellagra (b) Kwashiorkor
(c) Marasmus (d) Anemia

60. Brunner's gland are found in:
(a) Stomach (b) Ileum
(c) Duodenum (d) Rumen

61. The enzyme trypsin is found in:
(a) Pancreatic juice
(b) Saliva
(c) Bile juice
(d) Intestinal juice

62. Kutter cells are found in:
(a) Kidney (b) Liver
(c) Blood (d) Heart

63. Which of the following is most important for the growth of children up to the age of 14?
(a) Protein (b) Vitamin
(c) Fat (d) Milk

64. Animal meat is a good source of:
(a) Protein (b) Vitamin
(c) CHO (d) Chlorophyll

65. Which is the Main source of energy for human brain?
(a) Fats (b) Glucose
(c) Vitamins (d) Protein

66. Milk Sugar is:
(a) Lactose (b) Fructose
(c) Maltose (d) Sucrose

67. Stomach of camel does not have:
(a) Rumen (b) Reticulam
(c) Omasum (d) Abomasums

68. The digestion of by amylase is completed in the:
(a) Mouth (b) Duodenum
(c) Ileum (d) Stomach

69. The term used for the food or any substance that supplies the body with elements necessary for metabolism:
(a) Health (b) Nutrient
(c) Food (d) All of these

70. Which of the following tests helps in diagnosis of cancer?
(a) X-ray (b) Urine test
(c) Blood test (d) Biopsy test

71. The protein content of edible portion of egg is:
(a) 12% (b) 13.3%
(c) 16.3% (d) 15%

72. The protein content in wheat is approximately:
(a) 7% (b) 8%
(c) 12% (d) 16%

73. Which one of the following descending order of items by their fat content?
(a) Egg yolk, butter, cheese, cream, milk
(b) Butter, ghee, cheese, egg yolk, cream
(c) Cream, cheese, condensed milk, egg (whole), cow milk
(d) Ghee, butter, egg yolk, cheese, condensed milk

74. Which of the following minerals plays an important role in preventing dental decay?
(a) Sodium (b) Iodine
(c) Iron (d) Fluorine

75. Among the following, which food item contains the maximum quantity of carbohydrates?
(a) Apples (b) Potato
(c) Bread (d) Cooked rice

76. Two rickets known sources of edible protein are:
(a) Meat and eggs
(b) Milk and vegetables
(c) Soybean and groundnut
(d) Some algae and other micro organisms

77. Fluorine is present in:

(a) Sea-food
(b) Common salt
(c) Green vegetables
(d) Drinking water

78. Carbohydrates, fats & proteins are essential for:
(a) Metablic processes of an organism
(b) Providing energy
(c) Formation of structures
(d) All of these

79. Of the following, which one has more variety of nutrition?
(a) Animals (b) Bacteria
(c) Plants (d) Fungi

80. Fat is a?
(a) Lipid (b) Protein
(c) Amino acid
(d) Ether

81. The active site of an enzyme:
(a) Never Changes
(b) Forms no chemical bond with substrate
(c) Determined by structure and the specificity of the enzyme
(d) They are non specific in their action

82. Which one forms the raw material for coenzymes?
(a) Vitamins
(b) Carbohydrates
(c) Proteins (d) Matals

83. Optimal temperature of enzymes present in human body is:
(a) 27°C (b) 37°C
(c) 47°C (d) 57°C

84. Which step causes activation of catalytic site of an enzyme?
(a) Change is pH of the surroundings
(b) Formation of Enzyme Substrate complex
(c) Change in the charge of the active site
(d) Change in temperature

85. Enzymes are composed of hundreds of:
(a) Cofactors (b) Coenzymes
(c) Prosthetic group
(d) Amino acids

86. The substance that sometimes acts as a source of chemical energy helping to drive the reaction that would otherwise be difficult or impossible is:
(a) Substrate (b) Coenzyme
(c) Cofactor
(d) Metal activator

87. If non-protein part of the enzyme is loosely attached to the protein part it is known as:
(a) Cofactor
(b) Prosthetic group
(c) Metal activator
(d) Coenzyme

88. The essential raw material from which the coenzymes is made:
(a) Metal ions (b) Vitamins
(c) Proteins
(d) Carbohydrates

89. The enzyme involved in the synthesis of proteins is integral part of:
(a) Chloroplasts
(b) Mitochondria
(c) Golgi complex
(d) Ribosomes

90. Biological molecules (proteins) which catalyze a biochemical reaction and remain unchanged after completion of reaction are called:
(a) Cofactor (b) Coenzymes
(c) Activator (d) Enzymes

91. The active site of enzyme is made up of how many regions:
(a) Two (b) Three
(c) Four (d) Five

92. Most enzymes:
(a) Lie freely in cytoplasm
(b) Are bond to certain organelles
(c) Are present in the nucleus
(d) Some lie freely in cytoplasm and other share bound to organelle

93. Which of the following stimulate the secretion of gastric glands?
(a) Secretin (b) Gastrin
(c) Bile (d) Pancreatin

94. Autotrophic organisms can exist in which environment?

(a) Organic (b) Inorganic
(c) Wet (d) Terrestrial

95. Pancreatic amylase is also called:
(a) Secretin (b) Gastrin
(c) Lipase (d) Amylopsin

96. The liquid that escapes during defrosting frozen meat contains – bacteria
(a) Campylobacter
(b) Nitrobacter
(c) Azobacter (d) Salmonella

97. Insectivorous plants are:
(a) Autotrophic
(b) Saprophytic
(c) Symbiotic (d) Parasites

98. The protein content of edible portion of egg is:
(a) 2% (b) 13.3%
(c) 10.3% (d) 15%

99. Among the following food items, which one has the highest amount of carbohydrates?
(a) Apple (b) Banana
(c) Cabbage (d) Pea

100. Which among the following is the richest source of ascorbic acid?
(a) Apple (b) Bean
(c) Carrot (d) Guava

101. In the balanced dietaries for a day of an adult working man, weights of carbohydrate food and total protein food (both superior and inferior) should be in order of:
(a) 420 gm and 420 gm respectively
(b) 500 gm and 600 gm respectively
(c) 600 gm and 420 gm respectively
(d) 600 gm and 600 gm respectively

102. Which of the following is not considered a fat soluble vitamin?
(a) Vitamin A (b) Vitamin B
(c) Vitamin K (d) Vitamin E

103. Which of the following is not considered a water soluble vitamin?
(a) Vitamin B (b) Vitamin C
(c) Vitamin D (d) Vitamin B_{12}

104. Which of the following is caused by a Vitamin D deficiency?
(a) Edema (b) Anemia
(c) Lupus (d) Rickets

105. What disease is caused by a deficiency of Vitamin C (Ascorbic Acid)?
(a) Scurvy (b) Pellagra
(c) Beriberi (d) Rickets

106. Citrus fruits are one of the best sources of:
(a) Vitamin A (b) Vitamin C
(c) Vitamin K (d) Vitamin D

107. After drinking contaminated water, you would be most apt to develop symptoms of:
(a) Malaria (b) Typhoid fever
(c) Yellow fever
(d) Schistosomiasis

108. Dialysis is used in the case of a patient suffering from:
(a) Heart problems
(b) Kidney problems
(c) Respiratory diseases
(d) Neurological disorders

109. Which of the following medicines is administered to patients suffering from diabetes?
(a) Penicillin (b) Insulin
(c) Sulpha drugs
(d) Streptomycin

110. Which of the following acids, secreted internally, helps in digestion?
(a) Sulphuric (b) Citric
(c) Hydrochloric
(d) Acetic

111. Pepsin is secreted by:
(a) Zymogene cells of stomach
(b) Zymogene cells of duodenum
(c) Paneth cells
(d) None of these

112. The deficiency marasmus in children is caused by due to the deficiency of:
(a) Fats
(b) Carbohydrates
(c) Proteins (d) Vitamins

113. Starch is converted into maltase by the action of:
(a) Invertase (b) Amylase
(c) Sucrose (d) Maltase

114. The enzyme trypsin is found in:
(a) Pancreatic juice
(b) Saliva

(c) Bile juice
(d) Intestinal juice

115. Crypts of Lieberkuhn is an example of:
(a) Simple tubular gland
(b) Coiled tubular gland
(c) Simple alveolar gland
(d) Compound alveolar gland

116. During fasting, in what sequence that are the following organic compound used up by the body?
(a) First fats, next carbohydrates and lastly proteins
(b) First carbohydrates, next proteins and lastly lipids
(c) First proteins, next lipids and lastly carbohydrates
(d) First carbohydrates, next fats and lastly proteins

117. The principal action of enter-peptidase is only to activate - of the pancreatic juice:
(a) Amino peptidase
(b) Trypsinogen
(c) Trpsin (d) Chymotrypsin

118. Which Vitamin deficiency results; in spontaneous bleeding?
(a) Vitamin C (b) Vitamin B
(c) Vitamin D (d) Vitamin K

119. In which form glucose is stored in the liver?
(a) Ribose (b) Glycogen
(c) Lactic acid (d) Lactose

120. Which milk contains more fat?
(a) Camel (c) Reindeer
(c) Cow (d) Buffalo

121. Sucrose is a:
(a) Disaccharide
(b) Polysaccharide
(c) Monosaccharide
(d) None of these

122. The protein content in wheat is approximately:
(a) 12% (b) 15%
(c) 20% (d) 30%

123. Which of the following tests helps in diagnosis of cancer?
(a) Blood test (b) Biopsy test
(c) X-ray (c) Urine test

124. The essential raw material from which the coenzymes is made:
(a) Proteins
(b) Carbohydrates
(c) Metal ions (d) Vitamins

Answers

1.	(d)	2.	(c)	3.	(a)	4.	(b)
5.	(a)	6.	(a)	7.	(c)	8.	(a)
9.	(b)	10.	(c)	11.	(a)	12.	(c)
13.	(c)	14.	(a)	15.	(d)	16.	(c)
17.	(d)	18.	(a)	19.	(c)	20.	(c)
21.	(c)	22.	(b)	23.	(c)	24.	(d)
25.	(a)	26.	(b)	27.	(b)	28.	(d)
29.	(c)	30.	(d)	31.	(b)	32.	(d)
33.	(c)	34.	(d)	35.	(c)	36.	(a)
37.	(c)	38.	(a)	39.	(b)	40.	(a)
41.	(d)	42.	(c)	43.	(c)	44.	(b)
45.	(d)	46.	(c)	47.	(c)	48.	(c)
49.	(b)	50.	(c)	51.	(d)	52.	(c)
53.	(d)	54.	(b)	55.	(c)	56.	(b)
57.	(b)	58.	(c)	59.	(b)	60.	(c)
61.	(a)	62.	(b)	63.	(a)	64.	(a)
65.	(b)	66.	(a)	67.	(c)	68.	(b)
69.	(b)	70.	(d)	71.	(b)	72.	(c)
73.	(d)	74.	(c)	75.	(c)	76.	(c)
77.	(d)	78.	(d)	79.	(a)	80.	(a)
81.	(c)	82.	(a)	83.	(b)	84.	(b)
85.	(d)	86.	(c)	87.	(d)	88.	(b)
89.	(d)	90.	(d)	91.	(b)	92.	(d)
93.	(b)	94.	(b)	95.	(d)	96.	(d)
97.	(a)	98.	(b)	99.	(b)	100	(d)
101	(c)	102	(b)	103	(c)	104	(d)
105	(a)	106	(b)	107	(b)	108	(b)
109	(b)	110	(c)	111	(a)	112	(c)
113	(b)	114	(a)	115	(a)	116	(d)
117	(b)	118	(d)	119	(b)	120	(c)
121	(a)	122	(a)	123	(b)	124	(d)

==========

DIET & NUTRITION

Tick the correct one:

1. How many calories should a child 12 years of age be getting per day?
(a) 1,000 (b) 4,000
(c)✓ 2,000 (d) 1,500

2. ______ means the process of providing or obtaining the food necessary for health and growth also food; nourishment:
(a) Wellness (b) Values
(c)✓ Nutrition (d) Lethargy

3. Select the nutrient that best applies to the description. This nutrient is involved with all body processes, makes up the basic part of the blood, helps remove waste, regulates body temperature, and cushions the spinal cord and joints. What is the nutrient?
(a) Vitamins (b) Minerals
(c) Proteins (d)✓ Water

4. A portioned variety of carbohydrates, proteins, fats, vitamins, minerals and water are necessary ______ for a healthy person:
(a)✓ Diet (b) Drugs
(c) Toxic (d) Genetics

5. What food gives us energy, protein, minerals, and vitamins? It is probably the first food we ever had:
(a)✓ Milk (b) Cookies
(c) Drugs (d) Toxic

6. This food group is made up of foods such as broccoli, spinach, potatoes, and asparagus. What is the food group?
(a) Grains (b) Fruits
(c)✓ Vegetables (d) Oils

7. If someone has a cold. They might not have this cold if she had eaten more foods rich in:
(a) Vitamins (b)✓ Fat
(c) Protein (d) Water

8. A ______ is an illness caused by consuming foods or beverages that have been contaminated with pathogens. Commonly referred to food-poisoning:
(a)✓ Food – borne illness
(b) Disease
(c) Dehydration
(d) Supplements

9. A unit of energy is a:
(a)✓ Calorie (b) Fat
(c) Carbohydrate

10. Which vitamin is fat soluble?
(a) B (b) C
(c) K
(d)✓ All vitamins are fat soluble

11. A customer on a high-fibre diet should not be served:
(a)✓ Sauces made from white, refined flour
(b) Savoury and sweet dishes that have had dried fruits added
(c) Larger quantities of vegetables
(d) Wholemeal or whole grain breads

12. Which of the following applies to the food served for a high-energy diet?
(a) Foods high in fat and high in carbohydrates
(b) Foods high in fat and low in carbohydrates
(c)✓ Foods low in fat and high in carbohydrates
(d) Foods low in fat and low in carbohydrates

13. Which of the following is not a tree nut?
(a)✓ Peanuts (b) Almonds
(c) Cashews (d) Walnuts

14. Which of the following animal meats are restricted for Jewish and Muslims customers?

(a) Cattle meat (b) Goat meat
(c)✓ Pork meat (d) Sheep meat

15. To keep the heart running:
(a)✓ Energy is required
(b) No energy is required
(c) Heart beat occurs automatically
(d) Depends on asleep or awake

16. From person to person the amount of food materials:
(a) Remain alike
(b) Decrease
(c)✓ Varies (d) Increase

17. A balanced diet for one person may be suitable for:
(a) Growing children
(b) All other persons
(c) Pregnant women
(d)✓ No other person

18. Age, activities and life style determines the:
(a) Peristalsis
(b) Rate of reaction
(c)✓ Amount of food materials
(d) The sleep time

19. What is BMI?
(a) Brains mush index
(b) Branded mud index
(c) Brutish melon index
(d)✓ Body mass index

20. What disease causes soft and weak bones?
(a)✓ Rickets (b) Bulimiac
(c) Goiter (d) Pellagra

21. Working out and exercising are examples of:
(a)✓ Physical health
(b) Emotional health
(c) Social health
(d) Spiritual health

22. What are two factors to being fat?
(a)✓ Eating and Watching Netflix
(b) Stress and technology
(c) Homework and Twitter
(d) ISIS and Lunch Period

23. The disease that became common for sailors because of long voyage without vitamin C in the diet was:
(a) Mutiny (b) Herpes
(c)✓ Scurvy (d) Ebola

24. What protects your body from getting colds and disease?
(a)✓ Cereal, fish, eggs
(b) Vitamins
(c) Protein (d) Minerals

25. Food such as milk, cheese and egg help us to:
(a)✓ Grow (b) Sleep
(c) Play (d) Study

26. What are most cereals made of:
(a) Salt, butter and cabbage
(b)✓ Rice, wheat, oats, and corn
(c) Sugar, bread, cloth

27. When is a person considered to be obese?
(a) When they have heart disease and diabetes
(b) When they eat too many fatty foods
(c)✓ When they are 20% over their ideal weight for height
(d) When they do not have adequate foliate in the diet

28. Which one is not a benefit of exercise?
(a)✓ Causes obesity
(b) Prevents diabetes
(c) Lowers high blood pressure
(d) Boosts your mood

29. What factors can influence your appetite:
(a)✓ Time (b) Money
(c) Family (d) Culture

30. If you are at high risk for heart disease that would you need to meet with?
(a) Pediatrician
(b) Allergist
(c)✓ Registered Dietitian

(d) Dentist

31. What are carbohydrates important for?
(a) They help you to think clearly
(b) They help you to breathe deeply
(c)✓ They give you most of your energy
(d) The filter toxins out of your blood

32. Half of your plate should consist of which foods?
(a)✓ Fruits and vegetables
(b) Dairy products
(c) Meat (d) Sugary drinks

33. Would this be a balanced meal?
(a)✓ Eggs, toast, orange juice and milk
(b) Doughnuts and soda
(c) Cereal without milk
(d) A banana and a peach

34. What group should you try to avoid?
(a) Meat group
(b) Milk group
(c)✓ Fats and sweets

35. Which food belongs to the meat group?
(a) Ice cream (b)✓ Hamburger
(c) Lettuce

36. Which food is in the bread group?
(a) Peanut butter
(b)✓ Celery (c) Grains

37. Which organ in your body stores a lot of nutrients?
(a) Brain (b) Skin
(c)✓ Liver (d) Pancreas

38. Cheese comes from which group?
(a) Vegetable group
(b) Fruit group
(c)✓ Dairy (milk) group

39. This food group is our body's best source of energy?
(a) Meat group
(b)✓ Fats, oils, sweets
(c) Breads and cereal
(d) Milk and cheese

40. This mineral is important because it helps in building bones and teeth and maintaining bone strength. This mineral is commonly found in milk. What is the mineral?
(a) Calcium Sodium
(b)✓ Fat (d) Water

41. Which nutrient is made by living things and is needed in small amounts? (micro nutrient)
(a)✓ Vitamins (b) Protein
(c) Minerals (d) Fats

42. What is the most important nutrient?
(a)✓ Carbohydrates
(b) Proteins
(c) Fats (d) Sugars

43. Which foods are the best to eat to keep your body running smoothly and to maintain healthy eating habits?
(a)✓ Organic food
(b) Preserved food
(c) Inorganic food
(d) Frozen food

44. The ability of a muscle to exert force for a brief period of time:
(a) Muscular endurance
(b)✓ Muscular strength
(c) Flexibility
(d) Cardiovascular endurance

45. This mineral helps to regulate and maintain the balance of fluids in the body. Table salt is a major source of this mineral. What is the mineral?
(a) Water (b) Fat
(c)✓ Sodium (d) Calcium

46. Nutrition includes the study of:
(a) The organism's food
(b) Process of digestion
(c) The way an organism obtains food
(d)✓ All of the above

47. Autotrophic organisms include:
(a)✓ Green plants and sulphur bacteria

(b) Green plants and all the bacteria
(c) Bacteria and virus
(d) Bacteria and fungi

48. Organisms that synthesise their own food are called:
(a) Green plants
(b) Sulphur bacteria
(c)✓ Autotrophs
(d) Purple-sulphur bacteria

49. Parotid gland is a/an:
(a) Gastric gland
(b) Intestinal gland
(c)✓ Salivary gland
(d) None of the above

50. Erepsin converts:
(a) Proteins into amino acids
(b) Proteins into peptides
(c)✓ Peptides into amino acids
(d) None of the above

51. Carbohydrates, fats & proteins are essential for:
(a) Metabolic processes of an organism
(b) Providing energy
(c) Formation of structures
(d)✓ All of these

52. Magnesium is found in which of the following?
(a) Cytochromes
(b) ATP
(c)✓ Chlorophyll
(d) Hemoglobin

53. Deficiency of which of the following causes chlorosis?
(a) Nitrogen (b) Magnesium
(c) Iron (d)✓ (a) & (b)

54. Deficiency of K + causes:
(a) Stunted growth & strong chlorosis
(b) No electron transport chains
(c)✓ Premature death of leaves
(d) Stunted growth of roots

55. Of the following, which one has more variety of nutrition?
(a) Animals (b)✓ Bacteria
(c) Plants (d) Fungi

56. Mastication is:
(a) Digestion (b) Absorption
(c) Assimilation
(d)✓ Chewing

57. Appendix is a part of:
(a) Ileum (b) Duodenum
(c)✓ Caecum (d) Colon

58. Bile juice is secreted by:
(a)✓ Liver (b) Pancreas
(c) Salivary gland
(d) Intestine

59. Bile juice is:
(a)✓ Alkaline (b) Acidic
(c) Neutral (d) Near acidic

60. The three portions of the small intestine, in the correct order, are:
(a) Caecum, colon, rectum
(b) Ileum, duodenum, jejunum
(c) Colon, caecum, rectum
(d)✓ Duodenum, jejunum, ileum

61. An enzyme that acts only in an acidic medium is:
(a)✓ Pepsin (b) Trypsin
(c) Rennin (d) Amylase

62. A non-enzyme protein present in the saliva is:
(a) Heparin (b)✓ Mucin
(c) Ptyalin
(d) None of the above

63. Absorption is maximum in the small intestine because of:
(a) The presence of villi
(b) Its length
(c) Its thin walls
(d)✓ All the above

64. The optimum level of carbon dioxide in the atmosphere is:
(a) 0.3% (b) 0.04%
(c) 0.1% (d)✓ 0.03%

65. Pyloric valve is present in the:
(a) Heart (b) Liver

(c)✓ Stomach (d) Intestine

66. The largest gland of the body is:
(a) Parotid gland
(b)✓ Liver
(c) Pancreas
(d) Submandibular gland

67. Alternatives to meat, fish and poultry as sources if proteins are:
(a) Eggs (b) Shellfish
(c) Legumes
(d)✓ All of the above

68. Which of the following fish is not an 'oily' fish?
(a) Herring (b) Sardines
(c)✓ Whiting (d) Pilchards

69. Common salt is known as:
(a) Sodium hydroxide
(b)✓ Sodium chloride
(c) Sodium nitrate
(d) Sodium bismuthate

70. A customer on a low-cholesterol diet should be served:
(a)✓ Meals low in saturated fats
(b) Chicken with the skin removed
(c) Meals that have been made using the deep frying method
(d) Offal

71. The enzyme that is secreted in an inactive form is:
(a) Lipase (b)✓ Trypsin
(c) Rennin (d) Ptyalin

72. The digestive juice that is almost neutral is:
(a) Gastric juice
(b) Bile juice
(c)✓ Pancreatic juice
(d) None of the above

73. Which of the following are chiefly digested in the stomach?
(a) Carbohydrates
(b)✓ Proteins
(c) Fats (d) Lipids

74. Large intestine in man mainly carries out:
(a) Digestion of fats
(b)✓ Absorption
(c) Assimilation
(d) Digestion of carbohydrate

75. The part of the digestive system where no digestion takes place is:
(a) Mouth (b)✓ Esophagus
(c) Ileum (d) Stomach

.MORE BOOKS
ENGLISH
- English General MCQs
- Modern Book of Idioms MCQs
- Modern Book of Pair of Words MCQs
- Modern Book of Word Power MCQs
- Modern Book of Common Error MCQs
- Modern Book of Synonyms and Antonyms MCQs
- Modern Books of Prices Writing
- University English Grammar and Composition
- Popular English Essays
- English Literature MCQs
- Short English Essays

SPORTS NUTRITION

Tick the correct one:

1. An adult should consume protein approximately:
   (a)✓ 0.36 gm/lb (b) 1.36 gm/lb
   (d) 2.04gm/lb (c) 0.40 gm/lb
2. During instant training up to may be protein consumed:
   (a) 2 gm/lb (b) 4 gm/lb
   (c)✓ 1 gm/lb (d) 5
3. How much energy is consumed by body during carbohydrate metabolism process?
   (a) 5 cal/g (b)✓ 4 cal/g
   (c) 6 cal/g (d) None of these
4. The gland which maintains body temperature is:
   (a) Thyroid (b) Pituitary
   (c) Adrenal
   (d)✓ Hypo thalamus
5. The longest and strongest bone in human body is called:
   (a) Tibia (b) Humors
   (c) Pelvis (d)✓ Femur
6. After drinking contaminated water would be most apt to develop symptoms:
   (a)✓ Typhoid (b) Malaria
   (c) Hepatitis (d) None of these
7. The motor nerve:
   (a) Carries impulses from the heart to the brain
   (b)✓ Carries impulses from the brain to different organs
   (c) They include a pace maker to activate the pumping of heart
   (d) Carries impulses from receptors to brain
8. Trachoma is the disease of _____ (caused bacterium)
   (a) Brain (b) Liver
   (c) Ear (d)✓ Eye
9. The heart of a normal adult human being weight about:
   (a) 200-260g (b)✓ 250-300g
   (c) 300-400 g (d) 250-500g
10. The part of body strictly, affected by:
    (a)✓ Respiratory system
    (b) Nervous system
    (c) Skeletal system
    (d) None of these
11. Hemoglobin in the blood is a complex protein rich in which:
    (a) Copper (b) Gold
    (c)✓ Iron (d) Fat
12. Amino acids are product of the digestion of:
    (a) Fats (b)✓ Proteins
    (c) Carbohydrates
    (d) Vitamins
13. Which are the functions of fats or lipids?
    (a) Regulate blood pressure
    (b) Blood vessels
    (c) Hair and skin
    (d)✓ All of these
14. If you eat large amount of high fat food which can lead to:
    (a) Weight gain
    (b) Obesity
    (c) Cancer (d) Heart disease
    (e)✓ All of them
15. How many types of fat:
    (a) Saturated fat
    (b) Hydrogenated fats
    (c) Uni saturated fats
    (d)✓ All of these
16. During blood processing, fat may undergo a chemical process called:
    (a)✓ Hydrogenated fat
    (b) Unsaturated fats
    (c) Saturated fats
    (d) None of these
17. Glycogen remaining stored in the liver and muscles amount about:
    (a)✓ 600k/cal (b) 500k/cal
    (c) 400 k/cal (d) None of these
18. Protein contains energy reserve of about _____

(a) 25000 kg/cal
(b) 3000 kg/cal
(c) 2500 kg/cal (d)✓ 2000 kg/cal

19. Fat reserves containing ______ of energy can maintain human body function:
(a) 500 kg/cal
(b)✓ 100000 kg/cal
(c) 1500 kg/cal
(d) None of these

20. The human body needs ______ more than other mineral:
(a) Chlorine (b)✓ Calcium
(d) Iron (d) Potassium

21. Spinal cord is part of which system in the human body?
(a) Skeletal (b)✓ Nervous
(c) Respiratory (d) Muscular

22. Which of the following would be considered a major mineral?
(a)✓ Calcium (b) Iron
(c) Copper (d) Silver

23. Which of the following is a major function of calcium?
(a) Component of enzymes
(b)✓ Nerve transmission
(c) (a) & (b)
(d) None of these

24. Which of the following is a major function of sodium?
(a) Body water balance
(b) Nerve function
(c) Blood clotting
(d)✓ (a) & (b)

25. Which of the following is major function of iron?
(a)✓ Component of hemoglobin, myoglobin and enzymes
(b) Component of thyroid hormones
(c) Maintenance of tooth structure
(d) Formation of gastric juice

26. If an individual is diagnosed with anemia, they probably have a deficiency of:
(a) Calcium (b)✓ Iron
(c) Sodium (d) Iodine

27. Which of the following carbohydrates can be digested and metabolized for energy?
(a)✓ Sugar (b) Fiber
(c) Cellulose
(d) Semicelluloses

28. Starches are found in:
(a) Cereals (b) Flour
(c) Potatoes
(d)✓ All of the above

29. Which of the following depends exclusively on carbohydrate for its source of energy?
(a)✓ Red blood cells
(b) White blood cells
(c) Liver cells
(d) Skeletal muscle cells

30. A high fiber diet reduces the incidence of:
(a) Colon cancer
(b)✓ Diverticulosis
(c) Stomach cancer
(d) All of the above

31. Which of the following is an incorrect statement about protein?
(a) Provides 4 kcal per gram
(b)✓ It is a primary energy source
(c) It is used for the syntheses of enzymes and hormones
(d) It can be round in eggs, milk and fish

32. Which food group has the highest recommended daily savings and can be found at the bottom of the food group pyramid:
(a)✓ Cereals
(b) Fruit and vegetables
(c) Meat and dairy products
(d) Fats and oils

33. Which of the following procedure requires total body water to be determined in order to calculate body composition?
(a) Skin fold thickness
(b)✓ Isotope dilution

(c) Hydrostatic underwater weighing
(d) Bioelectrical impedance analysis

34. When determining body composition via the technique of underwater weighing Archimedes principal is applied to determine:
(a)✓ Volume of the individual
(b) Density of the individual
(c) Weight of the individual
(d) Mass of the contract.

35. When of the following .is true of low carbohydrate low calorie diets?
(a) They promote ketosis
(b) Causes a rapid weight loss
(c) Cause dieresis
(d)✓ All of the above

36. Basal metabolic rate is important in energy balance because it represents of total energy expenditure in the average sedentary person:
(a)✓ 60 – 75% (b) 80%
(c) 75 – 90% (d) 50 – 60%

37. Physical activity usually represents between of daily energy expenditure:
(a) 2-5% (b) 5 – 10%
(c)✓ 5 – 40% (d) 5 – 60%

38. Women have a lower of BMR due to:
(a) Higher fat free mass
(b)✓ Lower fat free mass
(c) Thyroxin levels
(d) None of the above

39. The relationship between body fat and non basal energy expenditure is:
(a)✓ Significant
(b) Non significant
(c) Significant only in female
(d) Significant more in males

40. For sedentary occupation caloric intake exceeds need and therefore:
(a)✓ Body weight is increased
(b) Body weight is maintained
(c) There is a loss in body weight
(d) There is a loss in body weight then and increase

41. Blood doping could improve performance in:
(a) The 100 meter sprint
(b) The long jump
(c)✓ 10 miles race
(d) 200 meter sprint

42. Which of the following would not be caused by an overdose of cocaine?
(a) Arrhythmias
(b) Coma
(c)✓ Hypothermia
(d) Seizures

43. Research has proven that, protein supplements:
(a) Increase strength
(b) Increase muscle ass
(c) Increase limb circumference
(d)✓ None of these

44. Carnitine is used as a weight loss aid the molecule is primarily involved in:
(a)✓ Fatty acid transport
(b) Fatty acid oxidation
(c) Fatty acid synthesis
(d) All of the above

45. Sports managements is:
(a) An academic pursuit
(b) Professional occupation
(c)✓ (a) & (b)
(d) None of these

46. Managers mostly contribute to the realization of better:
(a) Life (b) Environment
(c)✓ Society (d) College

47. The field of psychology that explores the biological processes underlying behavior and experience is:
(a) Sports psychology
(b)✓ Physiological psychology
(c) (a) & (b)
(d) All of the above

48. What should be reduced while reducing weight?
(a) Lean body weight
(b)✓ Extra fat
(c) Protein (d) Acid

49. When velocities remain constant that time object?
(a) Accelerate (b) Decelerate
(c) (a) & (b) (d)✓ None of these

40. In normal environmental temperature how much water do you need per day?
(a)✓ 1 milliliter per caloric intake
(b) 2 milliliter per caloric intake
(c) 3 milliliter per caloric intake
(d) None of these

41. Anaerobic energy system takes place:
(a) Inside mitochondria
(b)✓ Outside cell mitochondria
(c) Outside cell
(d) None of these

42. What is the percentage of intracellular water in the body?
(a) 60% (b)✓ 65%
(c) 70% (d) 85%

43. Aerobic system takes place:
(a)✓ Inside mitochondria
(b) Outside mitochondria
(c) Outside cell
(d) None of these

44. How much volume of water increases gastric emptying rate:
(a) Up to 400 ml
(b)✓ 700 ml
(c) 800 ml
(d) None of these

45. The best source of vitamin A is:
(a) Lima bean (b)✓ Carrot
(c) Tomato (d) Orange

46. Healing of wounds is hastened by vitamin:
(a) A (b) C
(c) E (d)✓ K

47. The richest source of vitamin D is:
(a)✓ Cod liver oil
(b) Spinach
(c) Milk (d) Cheese

48. Cow milk is a rich source of:
(a)✓ Vitamin A (b) Vitamin B
(c) Vitamin C (d) Vitamin D

49. Which of the following vitamins promotes healthy functioning of eyes in human beings?
(a)✓ Vitamin A (b) Vitamin B
(c) Vitamin C (d) Vitamin D

50. Scurvy can be prevented by the intake of:
(a) Vitamin A (b) Vitamin B
(c)✓ Vitamin C (d) Vitamin D

51. Vitamins act as:
(a) Ribonucleic acid
(b) Enzyme
(c)✓ Co-enzyme (d) Amino acid

52. A hereditary disease in widen the affected person is unable to use glucose in its body metabolism is:
(a) Sickle cell anemia
(b) AIDS
(c)✓ Diabetes mellitus
(d) Hemophilia

53. Which of the following female mosquito is the cause of dengue fever?
(a)✓ Adedes Aegypteis
(b) Anophilies
(c) Barinohils
(d) None of these

54. Hepatitis is a disease of:
(a) Heart (b)✓ Liver
(c) Lungs (d) Brain

55. Primarily, which one of the following systems of the body is attacked by the HIV?
(a) Cardiovascular
(b)✓ Immune
(c) Respiratory
(d) Reproductive

56. Disease partussis is commonly known as:
(a) Poliomyelitis
(b)✓ Whooping cough
(c) Cholera (d) Hepatitis

57. The decrease secretion of insulin causes:
(a) Beri beri (b) Rickets
(c) Anemia (d)✓ Diabetes

58. AIDS virus destroys the ______ system of the human body:
(a) Circulation (b)✓ Immune
(c) Digestion (d) Brain

59. The AIDS virus is called:
(a) AIB (b) BIH
(c)✓ HIV (d) VIH

60. Iron deficiency causes:
(a) Bone deformity
(b) Irregular heart beat
(c) Tooth decay
(d)✓ Anemia

61. Which of the following statements is correct?
(a) Vitamin D helps in healing wound
(b)✓ Vitamin K is necessary for clotting of blood
(c) Vitamin C prevents rickets
(d) Vitamin E prevents night blindness

62. Vitamin A is present in:
(a) Cod Liver
(b) Milk
(c) Green vegetables
(d)✓ All of these

63. Poor night vision is due to lack of:
(a)✓ Vitamin A (b) Vitamin B
(c) Vitamin C (d) Vitamin E

64. Which vitamin is provided by sunlight to the body?
(a) Vitamin A (b) Vitamin B
(c) Vitamin C (d)✓ Vitamin D

65. Which of the following vitamin is essential for proper bone and teeth formation?
(a) Vitamin A (b) Vitamin B
(c)✓ Vitamin D (d) Vitamin C

66. AIDS virus has:
(a) Single-stranded RNA
(b)✓ Double-stranded RNA
(c) Single-stranded DNA
(d) Double-stranded DNA

67. Myopia is a defect of vision blurring:
(a) Close Objects
(b) distant objects
(c) Colored objects
(d) Identification of objects in dim light
(e) None of these

68. Which one of the following diseases is genetically linked?
(a) Epilepsy (b) AIDS
(c)✓ Color blindness
(d) Leucoderma

69. Which of the following diseases is caused by virus?
(a)✓ Smallpox (b) Thyroid
(c) Sleeping sickness
(d) Diphtheria

70. Diabetes is a disease in which the urine lacks:
(a) Penicillin (b) Streptomycin
(c) Thyroxin (d)✓ Insulin

71. Which one of the following is the correct group of diseases exclusively caused by virus?
(a) Measles, Syphilis, rabies cholera
(b) Poliomyelitis, syphilis, chicken pox mumps
(c) Cholera, tuberculosis, meningitis, syphilis
(d)✓ Measles, small pox, mumps, rabies

72. Which of the following is skin disease?
(a) Anemia (b)✓ Pellagra
(c) Osteomalacia
(d) Rickets

73. Which of the following is least infectious?
(a)✓ Leprosy (b) Hepatitis
(c) Tuberculosis
(d) Conjunctivitis

74. Which of the following is not a mosquito borne disease?
(a) Dengue fever
(b) Malaria
(c)✓ Sleeping sickness
(d) Filariasis

75. Diabetes is caused due to the malfunctioning of:
(a) Liver (b) Kidneys
(c) Pancreas (d)✓ Spleen

76. Heart attack is caused due to:
(a) Blood sugar
(b)✓ Cholesterol
(c) Blood protein
(d) Blood Urea

77. Malaria is a disease which affects the:
(a) Heart (b) Lungs
(c)✓ Spleen (d) Kidney

78. Leukemia is a disease of the:
(b) Lungs (b)✓ Blood
(c) Skin (d) Nerves

79. Rickets is a disease of the:
(a)✓ Bones (b) Tissue
(c) Muscles (d) Blood

80. Typhoid and cholera .are typical examples of:
(a) Cholera (b)✓ Influenza
(c) Amoebiasis (d) Type

91. Which of the following is caused by bacterial infection?
(a) Malaria (b)✓ Tetanus
(c) Cancer (d) Rabies

92. Which of the following diseases induces immunity?
(a)✓ Smallpox (b) Jaundice
(c) Diabetes (d) Tuberculosis

93. Parkinson is a disease of:
(a)✓ Brain (b) Heart
(c) Lungs (d) Bones

94. Acquired immune deficiency syndrome (AIDS) is caused by:
(a)✓ Virus (b) Fungus
(c) Bacteria
(d) None of these

95. Hemophilia means failure of the:
(a) Heart to filter
(b) Kidney to filter
(c)✓ Blood to clot
(d) Stomach to digest

96. The athletes in endurance events such as long distance running often eat large amount of carbohydrates for several days before the competition up to ______ of energy:
(a) 60 % (b) 70 %
(c) 50 % (d)✓ 80 %

97. Who should carbohydrates loading?
(a) Anyone exercise continue sing for 90 min are longer is likely to benefit from carbohydrates
(b) Typically sport such a cycling, marathon longer distance
(c) Such sport cross-country, skinning and endurance swimming benefit from carbohydrate
(d)✓ All of these

98. What is the function of mineral in the human body?
(a) Vital to health
(b) Regulating and building of living cells
(c) Maintaining the volume of water
(d)✓ All of these

99. If a man weight is 70 kg, how much calcium contains:
(a) 2 kg (b) 4 kg
(c)✓ 1 kg (d) 1.5kg

100. The function of calcium is:
(a) Used for building strong bone and teeth
(b) Used for muscle and nerves
(c)✓ (a) & (b)
(d) All of these

101. If we don't have enough calcium contain; we will suffer from or deficiency of calcium may cause:
(a) Fragile bones
(b) Tooth decay
(c) Muscle cramps
(d)✓ All of these

102. Which disease appears as result deficiency of iron?
(a) Blood less
(b) Anemia
(c)✓ (a) &(b)
(d) None of these

103. Deficiency of sulphur may cause:
(a) Eczema
(b) Imperfect development of hair and nail
(c) Skin problem
(d)✓ All of these

104. Which disease appears as result of deficiency of vitamin-A?
(a) Rickets (b) Blindness
(c)✓ Night blindness
(d) Survey

105. Which vitamin is compulsory for generation growth?
(a) A (b) C
(c)✓ E (d) D

106. What is the ratio of water in human body?
(a) 80% (b)✓ 70%
(c) 60% (d) 90%

107. Which component of food produces energy in human body?
(a)✓ Carbohydrates
(b) Fat
(c) Proteins (d) Mineral

108. Length of muscular duct of food is:
(a) 20 cm (b) 22 cm
(c) 15 cm (d)✓ 25 cm

109. Starting part of stomach is called:
(a) Pyloric end
(b) Mavicxs membrane
(c)✓ Cardiac end
(d) None of these

110. The ending part of stomach his called:
(a) Cardiac end
(b)✓ Pyloric end
(c) Moivicxs Membrane
(d) None of these

111. Length of small intestine is:
(a) 2.5m (b) 2m
(c) 3m (d)✓ 7m

112. The starting part of small intestine is called:
(a) Cardiac end
(b) Mevix end
(c)✓ Duodenum
(d) Pyloric end

113. Length of large intestine is:
(a) 1.50m (b) 1.60m
(c)✓ 1.80m (d) 1.20m

114. Length of pancreases is:
(a)✓ 12 – 15 cm (b) 20 – 26 cm
(c) 25 cm (d) All of these

115. Average weight of pancreases is:
(a)✓ 75 gm (b) 90 gm
(c) 85 gm (d) 80 gm

116. The grinding of food is called:
(a) Absorption
(b)✓ Mastication of Food
(c) Chymification of food
(d) All of these

117. Insertion of saliva in food is called:
(a) Absorption
(b) Swallowing
(c) Excretion
(d)✓ Insalivations

118. Digestion process in stomach is called:
(a)✓ Chymification
(b) Mastication
(c) Swallowing
(d) None of these

119. How many boles in throat are?
(a) 4 (b)✓ 2
(c) 3 (d) 1

120. Small bony cork in throat is called:
(a) Pyloric end
(b) Cardiac end
(c)✓ Ape gullets
(d) None of these

121. Sugar is changed into glucose by:
(a)✓ Maltose (b) Aspirin
(c) Raining (d) Pepsin

122. Muscles attached to skin are called:
(a) Skeletal muscle
(b) Cardiac end
(c) Smooth muscle
(d)✓ Skin muscles

123. Ingredients of a balanced diet are:
(a) 4 (b) 5
(c)✓ 6 (d) 8

124. Food contains all ingredients are:
(a) Food (b) Nutrition
(c)✓ Balance diet
(d) None of these

125. Food missing some ingredients is called:

(a) Balance diet
(b)✓ Unbalance diet
(c) Nutrition (d) All of these

126. Rapture of skin or a minor boip disease is called:
(a) Sozak (b) Aids
(c)✓ Atshik (d) None of these

127. Protein digestion occurs in:
(a) Small intestine
(b) Abdomen
(c)✓ Stomach and duodenum
(c) Atshik

128. Fats are mainly digested in:
(a) Large intestine
(b)✓ Small intestine
(c) Mouth (d) (b) & (c)

129. Carbohydrates are digested in the form of two (glucose molecules) sugar glucose and maltose that can be absorbed by:
(a) Large intestine
(b) Stomach
(c) Liver
(d)✓ Small intestine

130. Vitamins such as A, D, E and K are absorbed by intestinal walls and store in the ______ and adipose tissues or body fat for use whom needed:
(a) Stomach
(b) Small intestine
(c)✓ Liver
(d) Muscle tissues

131. The process of providing or obtaining of the food essential for growth?
(a) Metabolism (b) Food
(c)✓ Nutrition (d) Food Process

132. It is the major form of energy and it use cellular metabolism?
(a) ADP (b)✓ ATP
(c) Metabolism (d) Anabolism

133. Which energy system athletes use only for very short duration up to 10 seconds?
(a)✓ ATP (b) ADP
(c) Anaerobic (d) Aerobic

134. What is other name of anaerobic system?
(a) CP system
(b) Aerobic System
(c) ADP System
(d)✓ Glycolytic System

135. Which energy system athlete use for sprint races and other short period activities and powerful events:
(a) ATP (b)✓ Anaerobic
(c) ADP (d) Aerobic

136. Which energy system dose player use for long duration games and races like marathon:
(a)✓ Aerobic (b) Anaerobic
(c) ATP (d) Metabolism

137. These things found in Echtomorph body type:
(a) Small Shoulder and Thin
(b) Lean
(c) Flat Chest and Fragile
(d)✓ All of these

138. Which qualities are found in mesomorph?
(a) Hard body and thick skin
(b) Muscular and Excellent Posture
(c)✓ (a) & (b) (d) None of these

139. The body of the extreme is round and soft and under developed muscles body type:
(a) Mesomorph (b)✓ Endomorph
(c) Ectomorph (d) Omosmorph

140. What is obesity?
(a) Refer to less weight
(b) Refer to an exercise amount of body
(c) (a) & (b) (d)✓ None of these

141. Fat is digested in the:
(a) Mouth
(b) Large intestine
(c) Spleen
(d)✓ Small intestine

142. Amnesia is related to:
(a)✓ Loss of memory
(b) Loss of hearing
(c) Loss of teeth
(d) Sleeping sickness

143. The hormone that increases the rate of heart beat and blood pressure after shock in a person is:
(a) Pancreatic (b)✓ Adrenalin
(c) Thyroxin (d) Gastrin

144. The antibiotic penicillin is obtained from:
(a) Bacterial (b) Plants
(c) Seaweeds (d)✓ Fungus

145. Mother's milk is preferred to cow's milk because it contains:
(a) More Lipids and less fat
(b) Less lipids and more fats
(c) More fats and more lipids
(d)✓ Less fats and fewer lipids

146. When milk is churned, the cream separates from it due to the:
(a) Cohesive force
(c) Frictional force
(b)✓ Centrifugal force
(d) Gravitational force

147. The protein content in .wheat. is approximately:
(a) 8 per cent (b) 6 per cent
(c)✓ 12 per cent (d) 16 per cent

148. Tooth decay is caused by:
(a) Salt (b)✓ Sugar
(c) Calcium (d) Nitrogen

149. The outermost layer of skin is known as:
(a)✓ Epidermis (b) Epiglottis'
(c) Ligament (d) Cartilage

150. Among the following food items, which one has the highest amount of carbohydrates?
(a) Apple (b)✓ Banana
(c) Cabbage (d) Pea

151. The compound used in anti-malarial drug is:
(a) Aspirin (b) Neoprene
(c) Isoprene (d)✓ Chloroquin

152. BCG vaccination (Bacillus Calmatte Guerine) is injected to get immunity from:
(a) Polio (b) Cholera
(c) Small pox (d)✓ Tuberculosis

153. One of the following elements is present in all proteins:
(a) Carbon (b) Hydrogen
(c) Oxygen (d) Nitrogen
(e)✓ All of them

154. One of the following descending orders of items is by their fat content:
(a) Egg yolk, butter, and cheese, cream; milk
(b) Butter, ghee, cheese, egg, and yolk; cream
(c) Cream, cheese, condensed milk egg (whole), cow milk
(d)✓ Ghee, butter, egg yolk, cheese, condensed milk

155. Why is it easier to swim in sea water than in river?
(a) Density of sea water is higher
(b) A current in sea water keeps the person afloat
(c)✓ Sea water is saltiest and so has an upward thrust
(d) None of these

156. Which vitamin is gained from sunlight?
(a) A-vitamin (b) B-vitamin
(c)✓ D-vitamin (d) E-vitamin

157. Which food is rich in B-6 Vitamin?
(a) Milk (b) Egg
(c)✓ Cord liver oil
(d) All of above

158. Ricket is disease of the deficiency of which vitamin?
(a) Vitamin B (b) Vitamin A
(c) Vitamin B-6
(d)✓ Vitamin D

159. Which food is rich in vitamin "D"?
(a) Butter (b) Milk
(c)✓ Egg yolk (d) All of above

160. Which food is rich in fats?
(a) Fish (b) Milk
(c)✓ Butter (d) Potatoes

161. Carbohydrate is made carbon dioxide _______ and oxygen:
(a) Nitrogen (b)✓ Hydrogen
(c) Sachariade (d) All of these

162. Carbohydrate is temporarily stored as glycogen in the:
(a) Tissues (b) Heart
(c)✓ Liver (d) All of these

163. What is protein?
(a) Makes hormones blood plasma transport system
(b) Enzymes basic building blocks of Proteins
(c)✓ (a) & (b) (d) None of these

164. Proteins are basically formed by:
(a) Lactic acid (b) Citric acid
(c) Mono acid (d)✓ Amino acid

165. How many amino acids are found in human body discovered by Robert Smith?
(a)✓ 20 (b) 23
(c) 30 (d) 25

166. Amino acids are net manufactured by the body can produced by diet intake:
(a) Non essential
(b)✓ Essential
(c) (a) & (b) (d) Potential

167. Comes from recycling of enzymes liver and muscles:
(a) Essential
(b) Potential
(c)✓ Non essential
(d) None of these

168. How much protein is required by an adult man per day?
(a)✓ 300gm (b) 400gm
(c) 500gm (d) 600gm

169. About ______ protein from animal source and about 80% protein from vegetable source absorb by body:
(a) 90% (b) 60%
(c)✓ 98% (d) 20 %

170. Which ate the protein functions during training?
(a) Tissue growth
(b) Energy (c) Wait training
(d) Pregnancy (e)✓ All of these

171. Which food is rich in protein?
(a) Milk (b) Barley
(c) Egg (d)✓ Meat

172. Which food contains most of carbohydrates?
(a) Wheat (b) Eggs
(c) Milk (d)✓ Cereals

173. Which food contains most of starch?
(a) Milk (b) Parley
(c)✓ Wheat (d) All of these

174. Which vitamin is found in oil, .fish milk and dairy products?
(a) Vitamin E (b) Vitamin A
(c)✓ Vitamin D (d) Vitamin K

175. Which food contains Nitrogen?
(a) Carbohydrate
(b) Fats
(c) Lipids (d)✓ Proteins

176. Which energy is providing through food to human body?
(a)✓ Fat and carbohydrates
(b) Fat and proteins
(c) Protein and lipids
(d) Protein and carbohydrates

177. How much water is excreted as urine from human body in a day?
(a) 2000 ml (b) 1800 ml
(c) 1609 ml (d)✓ 1500 ml

178. How much water is excreted as sweating from human body in a day?
(a) 900 ml (b)✓ 200 ml
(c) 800 ml (d) None of these

179. Water is expired in air from body daily?
(a) 400 ml (b) 600 ml
(c) 300 ml (d)✓ 200 ml

180. Average weight of parathyroid is:
(a) 140 mg (b) 180 mg
(c)✓ 200 mg (d) 250 mg

181. How much calcium is found in a common person?
(a)✓ 70-90 gm (b) 40 60 gm
(c) 20-25 kg (d) 30-35 kg

182. Which disease occurs due to lack of Vitamin-K?
(a) Anemia (b) Rickets
(c) (a) & (b)
(d)✓ Prolonged blood clotting

183. Which of the fowling dose helps in clotting of blood?
(a) Vitamin B_1 (b) Vitamin B_2
(c) Vitamin D (d)✓ Vitamin K

184. Fat soluble vitamins are:
(a) Vitamin A,B
(b)✓ Vitamin A,D,E,K
(c) Vitamin A,B,C,D
(d) Vitamin B,C

185. Water soluble vitamins are:
(a) Vitamin B,E
(b) Vitamin A,B
(c) Vitamin C,D
(d)✓ Vitamin B,C

186. Vitamin A is found in the:
(a) White Vegetables
(b)✓ Green Vegetables

(c) Yellow vegetables
(d) Red vegetables

187. Night blindness is due to lack of:
(a)✓ Vitamin A
(b) Vitamin B
(c) Vitamin C
(d) Vitamin D

188. Which one of the following in our diet promotes, bone formation and calcium absorption:
(a) Vitamin A (b) Vitamin B
(c)✓ Vitamin C (d)✓ Vitamin D

189. Rickets in childhood occurs due to the lack of:
(a) Vitamin A (b) Vitamin B
(c) Vitamin D (d) Vitamin C

190. Muscular and nervous disorders are due to lack of:
(a) Vitamin A (b) Vitamin C
(c) Vitamin (d)✓ Vitamin E

191. Which vitamin gets destroyed on heating?
(a) A (b) E
(c)✓ C (d) K

192. Vitamin B complex includes:
(a) Vitamins B_1,B_2
(b)✓ Vitamins B_1,B_2,B_6, B_{12}
(c) Vitamins B_6,B_{12}
(d) Vitamins B_2, B_3,B_9,B_{12}

193. Deficiency of Vitamin B_1 causes
(a) Rickets
(b) Skin Disease
(c)✓ Beri beri
(d) Infertility

194. Deficiency of Vitamin C leads to a disease known as:
(a)✓ Scurvy (b) Infertility
(c) Rickets (d) Beri beri

195. Which one of the following vitamins is known as the "anti-sterile "factor":
(a)✓ Ascorbic acid
(b) A,B
(c) Retinol (d) Riboflavin

196. Which vitamin is found in the body by exposure to ultra violet radiation on sunlight?
(a) Vitamin A (b) Vitamin B
(c) Vitamin C (d)✓ Vitamin D

197. The vitamin which can be most easily synthesized in human body is:
(a) Vitamin D (b) Vitamin C
(c) Vitamin B (d)✓ Vitamin K

198. How does vitamin D help in growing children?
(a) It increases height and weight
(b) It improves eye sight and memory
(c)✓ It strengthens bones and teeth
(d) It provides movement to limbs

199. Typhoid and cholera are typical examples of:
(a) Infection diseases
(b) Air-Borne diseases
(c)✓ Water borne diseases
(d) None of these

200. Which two organs glands are affected by malaria?
(a) Lungs and heart
(b)✓ Spleen and liver
(c) Kidneys and lungs
(d) Heart and brain

201. Virus cause:
(a) Cholera (b) Typhus
(c)✓ Typhoid (d) Scurvy

202. Vitamin 'D' Prevents:
(a) Tooth diseases
(c) Eye diseases
(b)✓ Bone Diseases
(d) Skin diseases

203. Virus of Aids was discovered in:
(a) 1980 (b) 1995
(c)✓ 1981 (d) 1982

204. 2 hours before your exercise, drink how many ounce of fluid:
(a) 20 ounce (b) 18 ounce
(c) 8 ounce (d)✓ 16 ounce

205. How much fluid is drunk during exercise?
(a)✓ 4 – 8 ounce
(b) 10 – 15 ounce
(c) 1 – 6 ounce
(d) None of these

206. How many hours you eat before event?
(a) 1 – 6 hours (b) 1 – 2 hours
(c) 1 – 4 hours (d) 1 – 5 hours

207. How much is fluid drunk after exercise?
(a)✓ 16 – 24 ounces
(b) 26 – 30
(c) 15 – 20 (d) None of these

208. Which are the major sources of energy after the event in exercise?
(a) Fat and protein
(b) Carbohydrates
(c)✓ Carbohydrates and protein
(d) None of these

209. What is the main function of water in our body:
(a)✓ Maintain glucose
(b) Maintain blood volume
(c) Temperature regulating
(d) Cell process
(e) Over heating

210. Which are the early sign of dehydration include?
(a) Headache (b) Fatigue
(c) Appetite (d)✓ All of these

211. If we don't use any drink like water and fluid we will suffer from:
(a) Dehydration
(b) Fatigue
(c) Heat exhaustion
(d)✓ All of these

212. What carbohydrate loading?
(a) A technique to-increase the blood volume in muscle
(b)✓ A technique to increase the amount of glycogen in muscles
(c) A technique to increase the amount of insulin in the body
(d) All of these

213. How many days before the event athlete carbohydrate eats 10-72 grams of carbohydrates per kilogram if body weight?
(a) 2 (b) 4
(c)✓ 5-7 (d) 10

214. Other name of smallpox is:
(a)✓ Chicken pox
(b) Pox
(c) Little pox (d) All of these

215. During exercise the primary nutrients used for energy are:
(a) Fats (b)✓ Carbohydrate
(c) Proteins (d) Vitamins

216. A carbohydrate which is found in the diet and released from the liver is:
(a) Sucrose (b) Fructose
(c)✓ Glucose (d) Maltose

217. What is the principal objective of cool down?
(a) Improve flexibility
(b) Return blood pressure to normal
(c)✓ Return heart rate to normal
(d) None of these

218. Who are the most productive managers?
(a)✓ Cooperative and friendly
(b) Cold and unresponsive
(c) Despots and authority figure
(d) None of these

219. During 45 minutes exercise an athlete should drink:
(a) 5-10 ml of water
(b) 50-100 ml of water
(c)✓ 500-1000 ml of water
(d) 5-10 liters of water

220. Scoliosis is the deformity of:
(a) Shoulder (b)✓ Spinal cord
(c) Legs (d) Aims

221. Lungs are part of which system in the human body:
(a) Skeletal
(b) Cardiovascular
(c) Renal (d)✓ Respiratory

222. Which carbohydrate is released from the liver?
(a)✓ Glucose (b) Sucrose
(c) Fructose (d) Lactose

223. The landing arena of High Jump will be
(a) 5× 4 mts (b) 5× 5mts
(c)✓ 5 × 3 mts (d) 5 × 6 mts

224. Blood is purified in the human body by?
(a) Carbon dioxide
(b) Nitrogen
(c)✓ Oxygen (d) Hydrogen

225. Name the vitamin which is water soluble:
(a) Vitamin A (b)✓ Vitamin B
(c) Vitamin E (d) Vitamin K

* * *

BIOCHEMISTRY – FOOD AND NUTRITION

1- GENERAL

1. What is Biochemistry?
   (a) Study of chemistry of human body
   (b) Study of chemistry of carbon compounds
   (c)✓ Study of chemistry of living things
   (d) Study of all matter
2. The living things are characterized by:
   (a) Property of growth
   (b) Property of reproduction.
   (c)✓ Smallest structural unit which is a cell
   (d) All the three of above
3. Which of the following is the most correct and complete description of Medical Biochemistry?
   (a) Study of size, shape and beauty of human body
   (b) Study of gross and microscopic structure of human body
   (c) Study of functions of human body at cell, tissue or organ level
   (d)✓ Study of structure and function of human body at the molecular level
4. What is Metabolism?
   (a) Physical activity of the body
   (b) Reactions catalyzed by enzymes
   (c)✓ Chemical changes occurring inside the cell
   (d) Heat production by the body
5. What is Nutrition?
   (a)✓ Study of diet and its relation to health
   (b) Study of different foods and their cooking
   (c) Study of various recipes
   (d) All of the above
6. The most common affliction in the world is:
   (a) Heart disease
   (b) Cancer
   (c)✓ Protein caloric malnutrition
   (d) Anemia
7. The crystal growth is the example of growth in:
   (a) Living system
   (b)✓ Non-living system
   (c) Virus (d) Bacteria
8. The term Biochemistry was given by:
   (a) Karl Von Lineous
   (b)✓ Carl Neuberg
   (c) Robert Brown
   (d) Stephen Hales
9. The smallest structural unit of a living thing is:
   (a) Nucleus (b)✓ Cell
   (c) Molecule
   (d) Atom

2- THE CELL

1. ______ is called power house of the cell:
   (a) Nucleus
   (b)✓ Mitochondria
   (c) Endoplasmic reticulum
   (d) Lysosomes
2. The energy currency of the cell is:
   (a)✓ ATP (b) DNA
   (c) Calories (d) Joule
3. The protein synthesis in the cell occurs at the:
   (a) Nucleus (b) Mitochondria
   (c)✓ Endoplasmic reticulum
   (d) Lysosomes
4. ______ do not have a nucleus:
   (a)✓ Mature RBC
   (b) Sperm cell
   (c) Motor neuron cell
   (d) Adipose cell
5. The marker enzyme of lyeosomes is:

(a)✓ Acid phosphatase
(b) Alkaline phosphatase
(c) Lactate dehydrogenase
(d) Catalase

6. An important property of plasma membrane is:
(a) Endocytosis
(b) Selective permeability
(c) Communication with other cells
(d)✓ All of the above

7. The largest organelle in the cell is:
(a) Endoplasmic reticulum
(b) Chromosomes
(c)✓ Nucleus
(d) Golgi bodies

8. Oxidative phosphorylation occurs in the:
(a) Inner membranal surface of criestae
(b) Outer surface of the criestae
(c)✓ Inner surface of mitochondria
(d) In complete mitochondria

9. Catalase is the marker enzyme for:
(a) Lysosome (b)✓ Peroxisome
(c) Nucleus
(d) Plasma membrane

10. The convenient way of determining the purity of an organelle preparation is to:
(a)✓ Measure the activity of marker enzyme in the various sub-cellular & actions
(b) Measure the proteins associated with that organelle
(c) Determine the osmotic pressure
(d) Measure the size

11. Which of the following statements about the biological membrane is incorrect?
(a) They are asymmetric bilayer structure
(b)✓ Their constituent lipid and protein moieties are held together by non covalent bonds
(c) They are rigid assemblies of protein, lipid and carbohydrate
(d) Their lipid moiety are amphipathic in nature

12. A living cell with reduced oxidative phosphorylation will show:
(a) Fewer ribosomes
(b) Thick plasma membrane
(c) Lack of motility
(d)✓ Fewer mitochondrion

13. The marker enzyme of Goigi bodies is:
(a) DNA polymerase
(b) Succinic dehydrogenase
(c)✓ Galactosyl transferase
(d) Alkaline phosphatase

14. Normal membrane potential is maintained by:
(a)✓ Na^+ K^+ pump
(b) Ca^{++} pump
(c) Membrane structure
(d) Membrane permeability

15. What is the effect of substituting an unsaturated fatty acid in place of a saturated fatty acid in membrane on its fluidity?
(a)✓ Fluidity decreased
(b) Fluidity increased
(c) No change in fluidity
(d) Unpredictable

16. What is the effect if cholesterol is inserted in place of a saturated fatty acid in a membrane?
(a)✓ Fluidity decreased
(b) Fluidity increased
(c) No change in fluidity
(d) Unpredictable

3- CARBOHYDRATE CHEMISTRY

1. Sucrose is a non-reducing sugar because:
(a) It is a disaccharide
(b) It is made up of non-reducing monosaccharides
(c)✓ Carbonyl group of constituent monosaccharides is not free, but is in glycosidic linkage
(d) It does not exist in ring structure

2. Why glucose and fructose form the same osazone?
   (a) Because they are isomers
   (b) Because they are anomers
   (c) Because they have same molecular weight
   (d)✓ Because they have exactly same structure of the molecule from carbon number 3 to 6 while the dissimilarity in structure at C_1 and C_2 disappears during the reaction with phenylhydrazine

3. Which of the following is the most appropriate etatement about mucopolysaccharides?
   (a)✓ Mucopolysaccharides are polymers of more than one sugar unit
   (b) They contain glucose
   (c) They are complex molecules
   (d) They are not soluble in water

4. The reserve carbohydrate in animals is:
   (a) Starch (b)✓ Glycogen
   (c) Glucose (d) Lactose

5. Cellulose is not digested by humans because:
   (a) It is insoluble in water
   (b) It is present in bulk in the diet
   (c) Large number of intra and inter-chain hydrogen bonds are present
   (d)✓ Human intestine lacks the enzyme which will split β-l, 4-glucosidic bonds

6. Which of the following statement which is not true for all sugars?
   (a) All sugars are soluble in water
   (b)✓ All sugars are reducing
   (c) All sugars are sweet in taste
   (d) All sugars do not give colour with iodine

7. The reducing action of sugars is due to:
   (a) Large number of hydroxylic groups
   (b)✓ Presence of free carbonyl group
   (c) Presence of ring structure
   (d) Their complex structure

8. A carbohydrate which cannot be hydrolyzed into simpler form is called:
   (a)✓ Monosaccharide
   (b) Disaccharide
   (c) Oligosaccharide
   (d) Polysaccharide

9. Which of the following is not a di6accharide?
   (a) Lactose (b) Maltose
   (c)✓ Galactose (d) Sucrose

10. The isomers whose orientation is different only at one carbon atom are known as:
   (a) Anomers (b)✓ Epimers
   (c) (a) & (b) (d) None of these

11. D-glucose and D-galactose differs at:
   (a)✓ One carbon atom
   (b) Two carbon atoms
   (c) Three carbon atoms
   (d) None of these

12. The major source of energy in the diet is:
   (a) Protein (b) Fat
   (c)✓ Carbohydrate
   (d) Lipids

13. The ring structure of D-glucose involves:
   (a) Cl and C4 (b) Cl and CS
   (c)✓ Cl and C6 (d) C2 and CS

14. Optical rotation of a compound can be measured by a:
   (a) Polaragraph (b)✓ Polarimeter
   (c) Spectrophotometer
   (d) Flourimeter

4- LIPID CHEMISTRY

1. The phospholipid which does not contain glycerol is:

(a) Cephalin
(b) Phosphatidyl serine
(c) Plasmalogen
(d)✓ Sphingomyelin

2. The nuclear structure of steroid compounds is characterized by a:
(a) Benzene ring
(b) Pentane ring
(c)✓ Cyclopentanoperhydrophenanthrene ring
(d) Phenanthrene ring

3. Cholesterol forms ester because it has a group:
(a)✓ Alcoholic group
(b) Carboxylic group
(c) Phenolic group
(d) Double bond

4. The carboxylic group of bile acids is attached to:
(a) Six membered ring
(b) Pentane ring
(c)✓ Side chain
(d) None of above

5. Which of the following statement is true for estrogens?
(a) They have 17 carbon atoms and no side chain
(b) They have 18 carbon atoms and a side chain
(c) They have 21 carbon atoms and ring A is aromatic
(d)✓ They have 18 carbon atoms and no side chain

6. Iodine number is the measure of ______ of fat:
(a) Molecular weight
(b)✓ Unsaturation
(c) Free fatty acids
(d) None of the above

7. Which of the following is not an emulsifying agent?
(a) Soap (b) Span
(c)✓ Alcohol (d) Tween 80

8. The smell of rancid butter is due to:
(a)✓ Butyric acid
(b) Palmitic acid
(c) Oleic acid
(d) Linoleic acid

9. All cerebrosidee; contain ____
(a) Glycerol
(b) Phosphoric acid
(c)✓ Carbohydrate
(d) Glucose

10. Which of the following is the parent molecule from which all other steroids of the body are synthesized?
(a) Sphingosine
(b)✓ Cholesterol
(c) Dolichol (d) Ergosterol

11. The rancidity of oils can be prevented by:
(a)✓ Tocopherol (b) Copper
(c) Vitamin C (d) All the above

12. Saponification number of a fat is:
(a) Directaly propotional to the m.wt
(b)✓ Inversely propotional to the m. wt
(c) Degree of unsaturation
(d) None of the above

13. The richest source of PUFA in the diet is:
(a) Butter (b) Eggs
(c) Milk
(d)✓ Vegetable oils

14. The m.wt of linoleic acid is 280 and the atomic weight of iodine is 127. What is the approximate iodine number of this fatty acid?
(a)✓ 180 (b) 270
(c) 90 (d) 130

5- PROTEIN CHEMISTRY

1. Which of the following amino acid is optically inactive?
(a)✓ Glycine (b) Serine
(c) Glutamate
(d) Histidine

2. The histamine is formed from histidine by:
(a) Methylation
(b)✓ Decarboxylation

(c) Acetylation
(d) Esterification

3. Substances can be separated by electrophoresis if they:
(a) Are soluble in water
(b)✓ Are electrically charged
(c) Have high molecular weight
(d) Have low molecular weight

4. Which of the following is a correct statement?
(a) All proteins have quaternary structure
(b) All proteins are enzymes
(c) All proteins are globular
(d)✓ All proteins have peptide bonds

5. The isoelectric pH of a protein is 5 and the pH of buffer used for electrophoretic separation is 7. Where will this protein move on electrophoresis?
(a)✓ Towards anode
(b) Towards cathode
(c) Will be stationary
(d) None of these

6. Denaturation causes ______ of protein:
(a) Hydrolysis of peptide bonds
(b)✓ Breaking of hydrogen bonds
(c) Reduction of disulfide bonds
(d) All of these changes

7. Four proteins have same electric charge but different molecular weight (50000, 80000, 1 Lac, 1.5 lac). Which one will migrate fastest on electrophoresis?
(a) Protein having molecular weight 1 lac
(b)✓ Protein having molecular weight 50,000
(c) Protein having molecular weight 1.5 lac
(d) Protein having molecular weight 80,000

8. The denaturation of a protein results in:
(a) Change in physical properties
(b) Change in physiological properties
(c) Change in immunological properties
(d)✓ All of the above

9. The secondary derivativee; of derived protein include products of:
(a)✓ Partial hydrolysis of protein
(b) Complete hydrolysis of protein
(c) Coagulated and denatured proteins
(d) Precipitated proteins

10. Which of the following participates in the formation of coils and helix structure?
(a) Covalent linkage
(b) Peptide linkage
(c) Intermolecular hydrogen bonding
(d)✓ Intramolecular hydrogen bonding

11. The secondary structure of many globular proteins is determined by the arrangement of polypeptide chain into:
(a)✓ A helix (b) Pleated sheets
(c) (a) & (b) (d) None of these

12. Which of the following is the incorrect statement about hemoglobin?
(a) It contains four globin chains
(b) It contains two different type of globin chains
(c)✓ Each hemoglobin molecule contains one heme molecule
(d) It contains iron in the ferrous state

13. Elastin is cross linked through its:
(a) Glutamine side chain
(b) Glutamate side chain
(c)✓ Lysine side chain

(d) Methionine side chain

14. A positive ninhydrin reaction is due to:
(a) Reducing sugar
(b) Cholesterol
(c)✓ A-amino acid
(d) Triglycerides

15. Which of the following protein is soluble in water?
(a)✓ Albumin (b) Protamine
(c) Histamine
(d) Scleroprotein

16. Sanger's reagent is:
(a) Ninhydrin
(b) Dansyl chloride
(c) Phenyl isothiocyanate
(d)✓ 2,4 dinitro flourobenzene

17. The structural protein is of following type:
(a) Water soluble
(b) Globular
(c)✓ Fibrous
(d) All of the above

18. The triple helical structure is found in:
(a)✓ Collagen (b) Proline
(c) Protein
(d) None of the above

6- NUCLEOPROTEIN CHEMISTRY

1. Nucleoprotein contains nucleic acids attached to:
(a) Anyprotein
(b) Acidic protein
(c)✓ Basic protein
(d) None of these three

2. The polynucleotides are characterised by bonds:
(a) Glycosidic (b) Peptide
(c)✓ Phosphodiester
(d) Ester

3. The deoxyribose has one atom less than the ribose:
(a)✓ Oxygen (b) Hydrogen
(c) Carbon
(d) None of these three

4. In a nucleoside, the base is attached to carbon atom number ____ of pentose molecule:
(a)✓ 1 (b) 2
(c) 3 (d) 4

5. Which of the following statement, is not true for DNA?
(a) The structure of DNA was established by Watson & Crick
(b) DNA contains two complementary strands of polynucleotides
(c) The two chains run in an opposite direction
(d)✓ The two chains are held together by hydrogen bonds between adenine guanine and cytosine-thymine

6. The 'Anticodon' is the triplet code residing on:
(a) mRNA (b)✓ tRNA
(c) Ribosomal RNA
(d) DNA

7. The change of a base in DNA is called as:
(a) Cancer (b)✓ Mutation
(c) Genetic engineering
(d) Transformation

8. The viruses are:
(a) Nucleoproteins
(b) DNA + Proteins
(c) RNA + Proteins
(d)✓ All of the above

9. Which of the following drug is used in the treatment of gout?
(a) Colchicine
(b) Cycloheximide
(c)✓ Allopurinol (d) Aspirin

10. The allopurinol acts as an inhibitor of which of the following enzyme?
(a) Urate dehydrogenase
(b) PRPP synthetase
(c) HGPRT
(d)✓ Xanthine oxidase

7- ENZYMES

1. The action of an enzyme is to:
   - (a)✓ Accelerate the rate of reaction
   - (b) Retard the rate of reaction
   - (c) Start the reaction
   - (d) All the three of above
2. The sulfa drugs stop the bacterial growth by:
   - (a) Poisoning the bacteria's
   - (b)✓ Acting as competitive inhibitor of bacterial enzyme synthesizing folate from PABA
   - (c) Binding to the catalytic site of bacterial enzyme
   - (d) None of the above
3. Organophosphorous insecticides are highly toxic substances which affect nervous system. Their mechanism of action is:
   - (a) They block the proton pump
   - (b) They inhibit Na+-K+ ATPase
   - (c) They inhibit ion channels
   - (d)✓ They irreversibly bind to catalytic site of acetyl choline esterase
4. The cancer of prostate is best diagnosed by elevated blood level of enzyme:
   - (a) Alkaline phosphatase
   - (b) Lactate dehydrogenase
   - (c)✓ Acid phosphatase
   - (d) Phospho hexose isomerase
5. Which of the following enzyme is first to rise in blood following myocardial infarction?
   - (a) GOT (b)✓ CPK
   - (c) LDH (d) GPT
6. Which of the following enzyme persists longest in blood after a heart attack?
   - (a) GOT (b) CPK
   - (c)✓ LDH (d) GPT
7. The differential diagnosis of jaundice is possible by measuring blood level of the enzyme:
   - (a)✓ Alkaline phosphatase
   - (b) Acid phosphatase
   - (c) Glutamate pyruvate transaminase
   - (d) Glutamate oxaloacetate transaminase
8. The enzymes are termed isoenzymes when:
   - (a) Same enzyme occurs in different tissues
   - (b) Same enzyme occurs in different compartments of the cell
   - (c) Same enzyme occurs in different organs
   - (d)✓ Different proteins catalyse same reaction
9. All digestive enzymes are:
   - (a) Transferases
   - (b) Oxidoreductases
   - (c)✓ Hydrolases (d) Synthetases
10. The enzymes catalyzing the transfer if hydrogen are called:
    - (a) Transferases
    - (b)✓ Oxidoreductases
    - (c) Isomerases (d) Catalases
11. The glycolytic enzymes occur in:
    - (a)✓ Cytoplasm (b) Mitochondria
    - (c) Peroxisomes
    - (d) Lysosomes
12. Which of the following is incorrect statement?
    - (a) Coenzymes frequently contain B vitamins as part of their structure
    - (b) Protein part of an enzyme is called as apoenzyme
    - (c) Holoenzyme is apoenzyme + coenzyme
    - (d)✓ Noncompetitive inhibitor binds to the active site of the enzyme
13. Competitive inhibitor:

(a) Competes with substrate for active site of enzyme for binding

(b) Has chemically similar structure to the substrate

(c)✓ (a) & (b) (d) None of these

14. Which of the following is the incorrect statement about isoenzymes of LDH?

(a) They are made by tetrameric combinations of two different polypeptide chains

(b)✓ They are made by tetrameric combinations of four different polypeptide chains

(c) They can be separated electro phoretically

(d) Different tissues have different isoenzymes profile

15. The number of isoenzymes of CPK are:

(a) 1 (b) 2

(c)✓ 3 (d) 5

16. ATP allosterically inhibits the enzyme:

(a)✓ Phosphofructokinase

(b) Pyruvate kinase

(c) Glyceraldehydes-3-P- dehydrogenase

(d) None of the above

17. Km is ______

(a)✓ The substrate concentration that gives half the maximum velocity

(b) Independent of the nature of the substrate

(c) Identical for all isoenzymes of enzyme

(d) The dissociation constant of the enzyme-substrate complex

18. A coenzyme can be separated by apoenzyme by:

(a) Iron-exchange chromatography

(b) Gel electrophoresis

(c) Salt precipitation

(d)✓ Dialysis

19. The "lock and key" theory of Fischer states that:

(a)✓ Active site in enzyme exists in proper conformation to the substrate molecule even in the absence of substrate

(b) Active site undergoes conformational changes to fit the substrate during binding to enzyme

(c) There is absolute specificity in reaction between enzyme and substrate

(d) Enzyme accelerates the rate of reaction by reducing energy of activation

20. Which of the following is an example of competitive inhibition of enzyme?

(a) Inhibition of chymotrypsin by diisopropyl fluorophosphate.

(b) Inhibition by heavy metals

(c) Inhibition of phosphofructokinase by citrate

(d)✓ Inhibition of succinic dehydrogenase by malonate.

21. Allosteric modulator influences enzymatic activity by:

(a) Competition for active site with substrate

(b)✓ Binding to site on enzyme distinct from active site

(c) Both of the above

(d) None of the above

8- VITAMINS

1. The clinicians prescribe B-complex vitamins to patients receiving antibiotic therapy because:

(a) They act as coenzymes

(b) They make antibiotics more effective

(c)✓ Otherwise B-complex vitamin deficiency may occur

(d) Vitamins are growth factors

2. The night blindness or inability to see in sub-dued light is due to dietary deficiency of vitamin A because:
(a) Vitamin A forms rhodopsin
(b)✓ Rate of regeneration of rhodopsin in retina is reduced because of low blood level of vitamin A
(c) Liver is not functioning normally in vitamin A deficiency
(d) There is not adequate light in the night

3. The insufficient exposure to sunlight may cause rickets in children because:
(a) Sunlight has magical powers
(b) Sunlight contains vitamin D
(c)✓ Sunlight induced synthesis of vitamin D_3 in skin is decreased causing vitamin D deficiency
(d) The conversion of vitamin D to its active form is not possible

4. The vitamin C deficiency may cause poor wound healing because:
(a) Vitamins, in general, are growth factors
(b)✓ In its deficiency synthesis of intercellular cement substance, is decreased
(c) Vitamin C deficiency causes anemia
(d) Vitamin C deficiency causes folic acid deficiency

5. The daily requirement of thiamin is dependent upon dietary intake of carbohydrates because:
(a)✓ Thiamin forms coenzyme TPP which functions in utilization of carbohydrates
(b) Food sources of carbohydrates also contain thiamin
(c) Carbohydrates are essential for the absorption of thiamin
(d) This vitamin is water soluble and partly destroyed by heat during cooking of carbohydrates'

6. The yellow-green fluorescent urine is passed after ingesting multi-vitamin tablet. This is because of vitamin:
(a) Thiamin (b)✓ Riboflavin
(c) Niacin (d) Pyridoxine

7. In hydrogen transfer reactions, riboflavin coenzyme accepts two hydrogen atoms at the positions:
(a)✓ 1 and 10 (b) 7 and 8
(c) 5 and 6 (d) 2 and 4

8. The chief metabolite of niacin excreted in urine is:
(a) Nicotinic acid
(b) NAD
(c)✓ N_1-methylnicotinamide
(d) NADP

9. The dietary protein intake affect the daily requirement of niacin because:
(a)✓ Niacin is synthesized from an amino acid present in protein
(b) Niacin is required for utilization of protein
(c) Protein inhibits bacterial growth in intestine which synthesize niacin
(d) Protein binds niacin and make it unavailable for absorption

10. The metal present in vitamin B_{12} is:
(a) Iron (b) Magnesium
(c)✓ Cobalt (d) Copper

11. The pernicious anemia is due to:
(a) Dietary deficiency of vitamin B_{12}
(b)✓ Lack of gastric intrinsic factor
(c) Defect in gastric mucosal cells
(d) Absence of specific B_{12} - binding proteins in plasma

12. In vitamin B_6 deficiency the abnormal metabolite which appears in urine is:
(a) Methyl malonic acid
(b) Formimino glutamic acid
(c)✓ Xanthurenic acid

(d) None of the above

13. The biochemical role of folic acid coenzymes is to transfer "one-carbon moiety" except:
(a) Methyl group
(b)✓ Carboxyl group
(c) Hydroxymethyl group
(d) Formyl group

14. The antitubercular drug INH causes the deficiency of vitamin:
(a) Riboflavin (b)✓ Pyridoxal
(c) Ascorbic acid
(d) Biotin

15. The biotin catalyses reactions:
(a) Methylaton
(b) Demethylation
(c)✓ Carboxylation
(d) Decarboxylation

16. The vitamin A is also called as:
(a) Anti infective factor
(b) Anti xerophthalmic factor
(c) Growth factor
(d)✓ All of the above

17. The carr price reaction is used to estimate the vitamin:
(a)✓ Vitamin-A (b) Vitamin-C
(c) Vitamin-E (d) Vitamin-K

18. The vitamin synthesized by intestinal bacteria is:
(a)✓ Vitamin B_{12}
(b) Vitamin-A
(c) (a) & (b) (d) None of these

19. The structure of which vitamin resembles the structure of hexoses?
(a) Vitamin-A (b)✓ Vitamin-C
(c) Vitamin-K (d) None of these

20. Methotrexate is an antagonist of:
(a) Thiamin (b) Cobalamin
(c)✓ Folic acid (d) Riboflavin

21. All of the following enzymes require biotin as a coenzyme except:
(a) Carbamoyl phosphate synthetase
(b) Acetyl CoA carboxylase
(c) Pyruvate carboxylase
(d)✓ Pyruvate dehydrogenase

22. Wheat germ oil has high content of this vitamin:
(a) Vitamin A (b) Vitamin C
(c) Vitamin D (d)✓ Vita E

23. Which of the following is important in post translational formation of γ-carboxy glutamyl residues?
(a) Vitamin A (b) Vitamin D
(c) Vitamin E (d)✓ Vitamin K

24. How many mg of tryptophan is needed to produce one mg of niacin in the body?
(a) 10 mg (b) 20 mg
(c) 40 mg (d)✓ 60 mg

25. In scurvy the main defect lies in:
(a)✓ Defective formation hydroxyproline
(b) Inability to bind sugar with aspargine residue
(c) Inadequate non covalent linkage between the individual strand
(d) Inadequate cross' linking of tropocollagen fibres

26. Which of the following findings is not observed in rickets?
(a) Normal or low calcium
(b) Increased phosphate
(c) Increased alkaline phosphatase
(d)✓ Normal alkaline phosphatase

27. Which of the following statement is true about vitamin B_{12}?
(a) It contains cobalt
(b) Hydroxycobalamin is more active form and this is retained longer in body when given orally
(c) It is not present in foods of vegetable origin
(d)✓ All of the above

9- BIOLOGICAL OXIDATION

1. What is oxidation?

(a) Addition of oxygen
(b) Removal of hydrogen
(c) Removal of electrons
(d)✓ All of these three

2. In the respiratory chain, the cytochromes transfer:
(a) Hydrogen (b)✓ Electrons
(c) Oxygen (d) Water

3. The cytochromes transfer electrons by:
(a)✓ Reversible oxidation – reduction of central iron atom
(b) Reduction of double bond
(c) Reduction of copper atom
(d) Reduction of oxygen

4. The uncouplers of oxidative phosphorylation cause:
(a) Extra heat production
(b) Decreared ATP systhesis
(c) Delinking of oxidation and phosphorylation
(d)✓ All of these three

5. Cyanide inhibits electron traport chain at the site:
(a)✓ Cytochromes
(b) NAD
(c) Iron-sulfur proteins
(d) Coenzyme Q

6. The enzyme catalase destroys hydroeen peroxide by formine:
(a) Hydrogen andoxygen
(b)✓ Water and moleeular oxygen
(c) Water and nascent oxygen
(d) All of these three

7. The aim of bioloeical oxidation is to:
(a) Produce heat energy in the body
(b) Synthesize ATP molecules
(c) Transfer hydrogen ultimately to oxygen
(d)✓ All of these three

8. In redox reactions:
(a) Less positive will oxidize and less negative will reduce
(b) Less positive will reduce and less negative will oxidize
(c)✓ More positive will oxidize and more negative will reduce
(d) More positive will reduce and more negative will oxidize

9. Oxygnases:
(a)✓ Incorporate oxygen into their substrate but not concerned with energy production
(b) Incorporate oxygen into their substrate and also concerned with energy production
(c) Do not incorporate oxygen into their substrate and also not concerned with energy production
(d) Do not incorporate oxygen into their substrate but concerned with energy production

10. Co-enzyme Q is:
(a) Also called ubiquinone and benzoquinone
(b) Lipid soluble quinone with polyisoprenoid side chain
(c) Is a non-protein molecule
(d)✓ All of these three

11. The catabolism of H_2O_2 is carried out in:
(a) Endoplasmic reticulum
(b)✓ Peroxisomes
(c) Nucleus (d) Mitochondria

12. Enzyme glutathione peroxidase contains:
(a) Chromium (b) Copper
(c) Zinc (d)✓ Selenium

10- IMMUNOGLOBULINS

1. Chemically, the antiboadies are:
(a) Proteins
(b) Carbohydrates
(c) Lipids
(d)✓ Glycoproteins

2. Chemically, the antigens are:
(a) Proteins
(b) Carbohydrates
(c) Lipids
(d)✓ Any organic macromolecule

3. After an antigen introduction in the body, the first immunoglobulin formed is:
(a) Ig G (b) Ig A
(c)✓ Ig M (d) Ig D

4. In the immunoglobulin structure, the light chains and heavy chains are joined by:
(a) Hydrogen bonds
(b)✓ Disulfide bonds
(c) Hydrophobic interactions
(d) Electrostatic interactions

5. IgM (pentamer) has _____ anti- gen binding sites:
(a) Two (b) Five
(c)✓ Ten (d) Four

6. The immunoglobulin _____ has the longest half life:
(a) IgG (b) IgA
(c) IgM (d)✓ IgE

7. The immunoglobulin ______ has the longest half life:
(a)✓ IgG (b) IgA
(c) IgM (d) IgD

8. The heavy chain present in immunoglobulin IgD is known as:
(a) Alpha (b)✓ Delta
(c) Epsilon (d) Gamma

9. In immunoglobulin molecule the carbohydrate moiety is linked to the:
(a) Light chain (b)✓ Heavy chain
(c) Variable site
(d) Constant site

10. Which immunoglobulin is a pentamer?
(a) IgG (b)✓ IgM
(c) IgE (d) IgD

11. Which of the following antibody can pass through placenta?
(a)✓ IgG (b) IgM
(c) IgE (d) IgD

12. Which is the incorrect statement about the structure of immunoglobulin?
(a)✓ Variable regions are restricted to the H chain
(b) The H chain has a higher m. wt than the L chain
(c) L chain is joined to H chain by 5-5- bridge
(d) H chain is joined to H chain by S-S- bridge

13. Which is the incorrect statement about the immunoglobulin?
(a) IgM is the most abundant immunoglobulin of the serum
(b)✓ IgM has less % of carbohydrate than IgG
(c) IgM has the highest m.wt
(d) IgA is abundant in mucous and breast milk

14. The antigen binding site of an immunoglobulin is at:
(a) C terminal end of heavy chain
(b) C terminal end of heavy and light chains
(c) N terminal end of light chain
(d)✓ N terminal end of heavy and light chains

15. Bence Jones proteins:
(a) Are synthesized in liver
(b) Contains heavy and light chains
(c)✓ Are filtered at glomeruli
(d) Have m. wt. 20,000

11- CARBOHYDRATE METABOLISM

1. Why excess carbohydrates are stored as glycogen and not glucose?
(a) Because glycogen is not soluble in water
(b) Because glucose is most abundant carbohydrate
(c) Because glycogen has more energy than glucose
(d)✓ Because glycogen considerably decreases osmotic pressure in the cell thus preventing cell lysis

2. How epinephrine, stimulates glycogenolysis simultaneously stopping glycogenesis?
   (a) By stimulating enzyme phosphor-rylation
   (b) By converting inactive phosphor-rylase Into active phosphorylase by phosphorylation
   (c) By releasing cAMP for glycolgenolysis but not for glycogenesis
   (d)✓ By converting the two enzymes phosphorylase and glycogen and inactive synthase into their active forms by phosphorylation respectively

3. Which mammalian cell does not have aerobic pathway of glucose catabolism?
   (a) Nerve cell (b) Sperm cell
   (c) Ovum (d)✓ Red cell

4. In aerobic glycolysis, glucose is first broken down to pyruvate and then to CO_2 and H_2O in the Kreb's cycle; but in anaerobic glycolysis it does not stop at pyruvate but forms lactate. Why?
   (a) Because pyruvate is toxic in larger concentration
   (b) Because pyruvate can form amino acid by amination
   (c) Because pyruvate can form glucose back
   (d)✓ Because this allows the regeneration of NAD from NADHz which is formed in earlier step of glycolysis thus assuring continuation of glycolysis

5. Which of the following step is not involved in substrate level phosphorylation?
   (a)✓ Dihydroxyacetone phosphate -7 Glyceraldeh yde-3- p hosp hate
   (b) 1, 3-diphosphoglycerate -7 3 - phosphoglycerate
   (c) Succinyl CoA-7 Succinate
   (d) Phosphoenol pyruvate -7 pyruvate

6. How many ATP molecules are produced in the citric acid cycle itself?
   (a)✓ One (c) Twelve
   (b) Two (d) Fifteen

7. The TCA cycle is suppressed by higher concentrations of:
   (a)✓ ATP (b) NAD
   (c) Citrate (d) Oxaloacetate

8. CO_2 is not produced in the reaction catalysed by the enzyme:
   (a) Pyruvate dehydrogenase
   (b)✓ Succinate dehydrogenase
   (c) Isocitrate dehydrogenase
   (d) α-Ketoglutarate dehydrogenase

9. The three steps of resembles the steps of β-Oxidation of fatty acids:
   (a) Fatty acid synthesis
   (b) Anaerobic glycolysis
   (c)✓ Citric acid cycle
   (d) HMP shunt

10. What is the main aim of citric acid cycle?
   (a) To produce energy from carbohydrates
   (b) To provide keto acids for synthesis of amino acids
   (c)✓ To completely oxidise acetyl CoA to CO_2 and H_2O with complete release of energy
   (d) To synthesize acids to maintain pH

11. Which of the following statement is not true for HMP shunt pathway?
   (a)✓ CO_2 is not produced in it
   (b) NADPH is produced
   (c) Pentoses are produced
   (d) Does not produce ATP

12. The ______ utilize fructose but not glucose:
   (a) Ovum (b)✓ Spermatozoa
   (c) Adipose tissue
   (d) Mammary gland

13. Neoglucogenesis occurs predominantly from the following compounds except:
(a) Lactate (b)✓ Fatty acids
(c) Glycerol (d) Amino acids

14. The uronic acid pathway is unique as it provides ______ to man:
(a) Ascorbic acid
(b) Xylulose
(c)✓ Glucuronic acid
(d) All of these

15. The ______ hormone does not stimulate hepatic glycogenolysis:
(a) Thyroxine (b) Adrenaline
(c) Glucagon (d)✓ Cortisol

16. Suggest a test to distinguish a case of renal glycosuria from diabetic glycosuria:
(a) Benedict's test
(b)✓ Blood sugar
(c) Urine sugar (d) GTT

17. A male patient's urine shows positive Benedict's test. Which sugar is unlikely to occur in it?
(a) Glucose (b) Galactose
(c)✓ Lactose (d) Pentose

18. In monkeys, L-ascorbic acid is synthesized in ______ pathway:
(a) Fatty acid synthesis
(b)✓ Dronic acid
(c) HMP shunt (d) Glycolysis

19. NADPH serves to regenerate ______ in red cells to prevent their lysis:
(a) Cholesterol (b)✓ Glutathione
(c) NADP (d) Cysteine

20. The G-6-PD deficiency causes hemolytic anemia due to lack of:
(a)✓ NADPH (b) NADP
(c) Pentoses (d) Cholesterol

21. How many ATP molecules are produced on complete oxidation of acetyl CoA in the citric acid cycle?
(a) Six (b) Nine
(c)✓ Twelve (d) Fifteen

22. Which acid acts as a carrier molecule in citric acid cycle?
(a) Citric acid
(b)✓ Oxaloacetic acid
(c) Succinic acid
(d) Isocitric acid

23. The deficiency of disaccharidase ______ is very common in humans:
(a) Sucrase (b) Maltase
(c)✓ Lactase (d) None of these

24. The reserve carbohydrate in plants is:
(a) Glycogen (b)✓ Starch
(c) Cellulose (d) None of these

25 The ______ has highest rate of absorption from gut in humans:
(a) Glucose (b) Fructose
(c)✓ Galactose (d) Mannose

26. The idiopathic pantosuria is characterized by:
(a)✓ Excretion of L-xylulose
(b) Excretion of glucose
(c) Excretion of arabinose
(d) Cataract formation

27. Which of the following enzyme is not involved in gluconeogenesis?
(a) Pyruvate carboxylase
(b) Phosphoenol pyruvate
(c) Carboxykinase
(d)✓ Hexokinase

28. Which of the following compound is not a substrate for gluconeogenesis pathway?
(a) Glycerol (b) Lactate
(c) Oxaloacetate
(d)✓ Glycogen

29. When a patient of galactosemia is placed on a galactose free diet, the galactose required for galactolipids biosynthesis is derived from?
(a) Fructose (b)✓ Glucose
(c) Fucose (d) Sucrose

30. The most important initial source of blood glucose during fasting is:
(a) Muscle glycogen
(b) Muscle protein
(c) Liver triglyceride
(d)✓ Liver glycogen

31. Glycolysis is inhibited by:

(a) Chloride (b)✓ Fluoride
(c) Magnesium (d) Cobalt

32. The major fate of glucose-6-phosphate in tissues in a well-fed state is:
(a) Hydrolysis of glucose
(b)✓ Conversion to glycogen
(c) Isomerisation to fructose-6-phosphate
(d) Conversion to ribulose-5-phosphate

33. The major fuel for the brain after prolonged starvation is:
(a) Glucose (b) Fatty acids
(c)✓ Ketone bodies
(d) Glycerol

34. The only sugar absorbed by intestine against a concentration gradient is:
(a) Glucose (b) Galactose
(c)✓ (a) & (b) (d) None of these

35. The monosaccharide most rapidly absorbed from the intestine is:
(a) Glucose (b) Fructose
(c) Mannose (d)✓ Galactose

36. Which of the following is not a polymer of glucose?
(a) Glycogen (b) Cellulose
(c) Amylose (d)✓ Inulin

37. Fructose utilization in a diabetic patient is not interfered because:
(a)✓ Fructokinase activity is not affected by insulin
(b) Glucokinase also affects fructose utilization
(c) There is deficiency of fruckinase in diabetic patient
(d) Fructose is more rapidly utilized by liver

38. Lactose intolerance is due to:
(a) ADH deficiency'
(b) Deficiency of bile
(c)✓ Lactase deficiency
(d) Malabsorption syndrome

39. In comparison to resting state, vigorously contracting muscles show:
(a) Decreased oxidation of pyruvate to CO_2 and H_2O
(b)✓ An increased conversion of pyruvate to lactate
(c) Decreased concentration of AMP
(d) A decreased NADH/NAD ratio

40. In contrast to liver, muscle glycogen does not contribute directly to blood glucose level because:
(a)✓ Muscles lack glucose-6-phosphate
(b) Muscles contain no glucokinase
(c) Muscles lack glycogen
(d) Muscles contain no glycogen phosphorylase

41. Essential pentosuria is characterized by appearance of ________ in urine:
(a) Glucuronate
(b) Xylitol
(c)✓ L-xylulose (d) L-gulonate

42. The tubular maximum for reabsorption of glucose is about mg/100 ml.
(a) 350 (b) 100
(c)✓ 180 (d) 250

43. The largest amount of glycogen is stored in the body in:
(a)✓ Muscle (b) Liver
(c) Kidney (d) Intestine

44. The enzyme adenyl cyclase is activated by all except:
(a) Epinephrine
(b) Nor – epinephrine
(c) Glucagon (d)✓ Insulin

45. Number of CO_2 molecules released during citric acid cycle are:
(a) 4 (b)✓ 2
(c) 3 (d) 0

46. The glycolytic enzyme inhibited by fluoride is:
(a) Pyruvate kinase
(b) Hexokinase
(c)✓ Enolase
(d) Lactate dehydrogenase

47. Which of the following statement is true regarding the α-amylase?
(a) Breaks glucose from one end of the carbohydrate
(b)✓ Cleaves only α -1, 4 linkages
(c) Cleaves only α -1, 6 linkage
(d) All of the above

48. Fructose, the major source of energy for spermatozoa in seminal fluid is formed by:
(a) Dephosphorylation of fructose - 1, 6 bisphophate
(b) Reduction of glucose to sorbitol and oxidation of sorbital to fructose
(c)✓ Isomerisation of glucose-6 phosphate to fructose - 6 - phosphate and then its dephophorylation
(d) None of the above

12- LIP METABOLISM

1. The dietary fat predominently consists of fatty acids having ______ carbon atoms:
(a) 14 (b)✓ 18
(c) 16 (d) 20

2. Pancreatic lipase does not hydrolyze ester linkage pre5ent on carbon of the triglycerides:
(a) 1 (b)✓ 2
(c) 3 (d) None of these

3. Circulating triglycerides are hydrolyzed by the enzyme:
(a) Pancreatic lipase
(b) Adipose tissue lipase
(c)✓ Lipoprotein lipase
(d) None of these

4. During absorption the water insoluble fats are solubilized by the help of:
(a) Bile salts
(b) Phospho lipids
(c) Monoglycerides
(d)✓ All of these three

5. In plasma the hydrophobic lipids are rendered hydrophilic by:
(a) Bile salts (b)✓ Proteins
(c) Carbohydrates
(d) All these three

6. The predominant lipid in normal diets is:
(a)✓ Triglycerides
(b) Phospholipids
(c) Cholesterol
(d) Glycolipids

7. The predominant lipid in the plasma in the post absorptive state is:
(a) Triglycerides
(b)✓ Phospholipids
(c) Cholesterol (d) Glycolipids

8. Human body depot fat predominantly consists of:
(a)✓ Saturated fatty acids
(b) Unsaturated fatty acids
(c) Essential fatty acids
(d) Non-esterified fatty acids

9. Butter fat is unique in its content of:
(a) Saturated fatty acids
(b) Unsaturated fatty acids
(c) Higher chain fatty acids
(d)✓ Lower chain fatty acids

10. Density dependent separation of plasma lipoproteins is achieved by the technique known as:
(a) Electrophoresis
(b)✓ Ultracentrifugation
(c) Centrifugation
(d) Precipitation

11. As the protein content in lipoprotein fractions of plasma increases its density:
(a)✓ Increases (b) Decreases
(c) Remains unchanged
(d) May vary either way

12. The storage of excess dietary calories in the form of fat in the body was preferred over other fuels because:
(a) Fat is insoluble in water
(b)✓ Fat has highest energy content
(c) Fat exists as liquid as well as solid

(d) Synthesis of fat does not require energy

13. What is the net synthesis of ATP by complete oxidation of butyric acid present in butter?
(a) 29 (b)✓ 27
(c) 129 (d) 40

14. The final end products of the catabolism of an odd chain fatty acid in β-oxidation are:
(a) Two molecules of acetyl CoA
(b) Acetyl CoA + Malonyl CoA
(c) Acetyl CoA + Succinyl CoA
(d)✓ Acetyl CoA + Propionyl CoA

15. Which ketone body does not possess a keto group?
(a) Acetone
(b) Acetoacetic acid
(c)✓ β-hydroxybutyric acid
(d) None of these three

16. The ketosis is due to absence of enzyme in the liver:
(a) Thiolase (b) Deacylase
(c)✓ Thiophorase
(d) None of these three

17. The normal content of fat in the liver is less than ______%
(a) 1 (b) 2
(c)✓ 5 (d) 10

18. Normal daily synthesis of cholesterol is:
(a) 100 -200 mg
(b) 200 - 500 mg
(c) 500mg-1g (d)✓ 1.5-2g

19. The whole cholesterol molecule is completely synthesized from:
(a) Glycerol (b) Fatty acid
(c) Glucose (d)✓ Acetyl CoA

20. The esterified cholesterol fraction in plasma of healthy individuals is ______ %
(a) 20-40 (b) 40-60
(c)✓ 60-80 (d) 80-100

21. The rate limiting step in cholesterol biosynthesis is:
(a) HMG – Synthase
(b)✓ HMG CoA reductase
(c) Mevalonate kinase
(d) All these three

22. Hypercholesterolemia is not found in:
(a)✓ Hyperthyroidism
(b) Nephrotic syndrome
(c) Hypothyroidism
(d) Obstructive jaundice

23. ______ is not a disease of cholesterol deposition:
(a) Xanthomatosis
(b)✓ Fatty infiltration of liver
(c) Atherosclerosis
(d) Cholelithiasis

24. The main role of HDL is in:
(a) Liver malfunction
(b) Heart disease
(c) Chylomicron formation
(d)✓ Cholesterol scavenger

25. Cholesterol is not synthesized in:
(a) Intestine (b)✓ RBC
(c) Liver (d) Kidney

26. Dietary cholesterol is carried by:
(a) LDL
(b)✓ Chylomicrones
(c) HDL (d) VLDL

27. All of the following compounds are found in cholesterol biosynthesis except:
(a) ATP (b) Acetyl CoA
(d) Ergosterol (c)✓ NADPH

28. Isopentenyl pyrophosphate is the precursor of cholesterol. How many molecules of it are required for synthesis of one molecule of cholesterol?
(a) 3 (b) 4
(c) 5 (d)✓ 6

29. Liporotein lipase, which digests triglycerides of chylomicrones, is most abundant in:
(a) Liver parenchymal cells
(b)✓ Capillary endothelial cells
(c) Intestinal epithelial cells
(d) The surface of adipocytes

30. Which of the following has the highest percentage of cholesterol esters?
(a) Chylomicrones
(b) VLDL
(c) HDL (d)✓ LDL

31. Triglycerides present in plasma lipoproteins are hydrolyzed by:
(a) Pancreatic lipase
(b)✓ Lipoprotein lipase
(c) Hormone sensitive lipase
(d) Co-lipase

32. The free fatty acids of blood are:
(a) Metabolically inactive
(b) Mainly bound to β-lipoprotein
(c) Stored in the fat depots
(d)✓ Mainly bound to plasma albumim

33. The atherosclerosis is caused by:
(a) A defect in HDL receptor
(b)✓ Diminished synthesis of LDL receptor
(c) Deficiency of lipoprotein lipase
(d) Absence of apo-E

34. HDL transports:
(a) Cholesterol from liver to tissue
(b) Triglycerides from liver
(c) Triglycerides from small intestine
(d)✓ Cholesterol from tissues to liver

35. The defective lipoprotein lipase activity in hyperlipidemia 'Type-I' ______
(a) Can be restored to normal by heparin
(b) Is due to an inherited defect in the colipase
(c)✓ Gives rise to turbid serum
(d) Is associated with plasma levels of both cholesterol and triglycerides

36. The lipid which accumulates in fatty livers is:
(a) Phospholipids
(b)✓ Triglycerides
(c) Cholesterol
(d) Free fatty acids

37. Which of the following statement is incorrect"?
(a) Chylomicrons have the lowest density
(b) HDL has the highest protein content statement is Lipid Metabolism
(c)✓ LDL has the lower lipid content than HDL
(d) Chylomicrons have the highest triglycerides content

38. Levostatin reduces cholesterol by:
(a) Excretion of cholesterol
(b)✓ Inhibition of HMG CoA reductase
(c) Inhibition of cholesterol absorption
(d) Inhibition of mevalonate kinase

39. The normal excretion of ketone bodies in a day is:
(a) 0.1 mg (b) 0.5 mg
(c)✓ 1 mg (d) 2 mg

40. As the lipid content in lipoprotein fractions of plasma increases its density:
(a) Increases (b) Decreases
(c) Remains unchanged
(d)✓ May vary either way

13- PROTEIN METABOLISM

1. Trypain acts on peptide bonds formed by ______ amino acids:
(a) Acidic (b)✓ Basic
(c) Aromatic (d) Polar

2. Chymotrypsin hydrolyses peptide bonds formed by amino acids:
(a) Acidic (b) Basic
(c) Aromatic (d)✓ Polar

3. Fasting amino acid nitrogen level in healthy individuals is around:
(a) 20-40 mg/dl
(b)✓ 4-6 mg/dl
(c) 2-4 mg/dl
(d) 10-20 mg/dl

4. Normally protein nitrogen is excreted from the body mainly in:

(a) Stool (b)✓ Urine

(c) Sweat (d) Bile

5. In the brain, the major mechanism of getting rid of ammonia is:

(a) Urea formation

(b)✓ Glutamine synthesis

(c) Formation of ammonium salts

(d) Synthesis of amino acids

6. The carrier molecule in Kreb's urea cycle is:

(a)✓ Ornithine (b) Oxaloacetate

(c) Fumarate (d) Citrulline

7. In the mitochondria, urea cycle is integrated to:

(a) Electron transport chain

(b) Oxidative phosphorylation

(c) Oxidation of fatty acids

(d)✓ TCA cycle:

8. tRNA binds amino acids at the

(a) 5'-end (b)✓ 3'-end

(c) Anticodon (d) Variable loop

9. All tRNAs have ______ nucleotide sequence at the amino acid acceptor stem:

(a)✓ Same (b) Different

(c) Analogous (d) Alternate

10. The enzyme peptidyl traneferase is located on:

(a) mRNA (b) tRNA

(c) Smaller sub unit of ribosome

(d)✓ Larger sub unit of ribosome

11. Codon-anticodon interaction takes place by:

(a) Covalent bonding

(b) Electrostatic attraction

(c)✓ Hydrogen bonding

(d) Van der Waal's forces

12. There are a total of ______ codons in the genetic code:

(a) 20 (b)✓ 64

(c) Unlimited (d) 59

13. ______ is not a chain termination codon:

(a)✓ DCA (b) UGA

(c) UAG (d) UAA

14. During elongation phase in protein synthesis the peptide bond formation is catalyzed by enzyme:

(a) Ligase (b) Synthetase

(c) Synthase

(d)✓ Peptidyl transferase

15. In order to inhibit bacterial protein synthesis which antibiotic does not bind to bacterial 30S ribosome sub unit?

(a) Tetracyclin (b) Gentamycin

(c) Streptomycin

(d)✓ Chloramphenicol

16. ______ inhibits bacterial protein synthesis by inhibiting bacterial RNA polymerases:

(a) Actinomycin D

(b)✓ Rifampin

(c) Puromycin

(d) Erythromycin

17. In eukaryotic protein synthesis methionine is incorporated as first amino acid while it is not present in most proteins at N-terminal end, because it is removed during:

(a) Chain initiation

(b)✓ Post-translational modification of protein

(c) Chain elongation

(d) Chain termination

18. In *lac operon model*, the repressor protein binds to:

(a) Regulator gene

(b) Structural gene

(c) Operator gene at p site

(d)✓ Operator gene at o site

19. The mutation is actually a change occurring in the:

(a) DNA (b) Nucleotide

(c) Nucleoside (d)✓ Base

20. The hemoglobinopathies are due to ______ mutation:

(a) Silent (b)✓ Missense

(c) Nonsense (d) Frame shift

21. Urea has two nitrogen atom the first comes from ammonia; which compound is the source of second nitrogen atom:
(a)✓ Aspartate (b) Glutamate
(c) Citrulline (d) Ornithine

22. All of the following contains RNA except:
(a) Large ribosomal subunit
(b) RNA
(c) Small ribosomal subunit
(d)✓ Aminoacyl tRNA synthetase

23. Which is the incorrect statement for aminoacyl tRNA synthetases?
(a) Amino acid activation is a two step reaction
(b) ATP is released from activated amino acid after combining to tRNA
(c)✓ They couple activated amino acid and tRNA
(d) Specific synthetases recognize specific amino acids

24. Name the bye-product of the urea cycle:
(a) Aspartate (b) Ammonia
(c) Ornithine (d)✓ Fumarate

25. According to Jacob & Monod hypothesis enzyme inducers exert their effect by interacting with:
(a) Operator gene
(b)✓ Repressor protein
(c) Structural gene
(d) Regulatory metabolite

26. How many high energy phosphate bonds are consumed for the synthesis of one peptide bond?
(a) 1 (b) 2
(c) 3 (d)✓ 4

27. Which enzyme is present in the stomach of infants but absent in adults?
(a) Trypsin (b)✓ Rennin
(c) Pepsin (d) Chymotrypsin

28. Ammonia in the kidney is excreted in exchange for:
(a) Chloride (b)✓ Sodium
(c) Bicarbonate
(d) Phosphate

14- AMINO ACID METABOLISM

1. Which one of the following is not an essential amino acid?
(a)✓ Tyrosine (b) Tryptophan
(c) Threonine (d) Proline

2. Name the purely ketogenic amino acid:
(a) Cysteine (b)✓ Leucine
(c) Lysine (d) Isoleucine

3. Name the amino acid which does not form a-ketoglutarate on catabolism:
(a) Glutamine (b) Proline
(c) Arginine (d)✓ Threonine

4. Which amino acid is notsynthesised by glycerate-3-phosphate route?
(a) Glycine (b)✓ Valine
(c) Serine (d) Cysteine

5. Name the amino acid which does not form succinyl CoA on catabolism:
(a)✓ Asparagine (b) Valine
(c) Isoleucine (d) Threonine

6. FIGLU is formed during the catabolism of amino acid:
(a) Glutamine (b) Proline
(c)✓ Histidine (d) Arginine

7. Which of the following biologically active compound is not formed from tyrosine?
(a) Melanin (b)✓ Histamine
(c) Thyroxine (d) DOPA

8. Nicotinic acid is formed during catabolism of:
(a)✓ Tryptophan (b) Tyrosine
(c) Histidine (d) Glutamine

9. Methylmalonyl CoA is not formed during catabolism of amino acid:
(a) Valine (b) Methionine
(c) Isoleucine (d)✓ Leucine

10. β-hydroxy-β-methyl glutaryl CoA (HMG CoA) is formed in the

synthesis of cholesterol and catabolism of:
(a) Valine (b)✓ Leucine
(c) Isoleucine (d) All of these

11. The whole glycine molecule is incorporated to synthesize following compounds:
(a) Heme (b) Purines
(c) Glutathione (d)✓ All of these

12. Amino acid _____ is the precursor of endogenous oxalate:
(a)✓ Glycine (b) Alanine
(c) Proline (d) Cysteine

13. Amino acid excreted in urine in Maple syrup disease is:
(a) Tyrosine (b) Typtophan
(c)✓ Leucine (d) Methionine

14. S-adenosyl methionine is used in the synthesis of:
(a)✓ Choline (b) Serine
(c) Homocysteine
(d) Cysteine

15. DOPA is formed in the metabolism of:
(a)✓ Tyrosine (b) Tryptophan
(c) Threonine (d) Histidine

16. The deficiency of enzyme tyrosinase leads to:
(a) Alkaptonuria
(b) Phenylketonuria
(c) Hartnap disease
(d)✓ Albinism

17. The enzyme deficient in homocystinuria is:
(a)✓ Cystathione synthatase
(b) Cystathione hydroxylase
(c) Cystathione isomerase
(d) Cystathione reductase

18. Alkaptonuria is due to deficiency of enzyme:
(a) Tyrosinase
(b) Phenylalanine hydroxylase
(c)✓ Homogentisic acid oxidase
(d) None of the above

19. Which of the following statement is not true about Maple syrup urine disease?
(a) Mental retardation
(b) Defect in branched chain amino acid metabolism
(c)✓ Hepatomegaly
(d) None of the above

15- NUCLEOPROTEIN METABOLISM

1. Respiratory CO_2 is the source of carbon atom number _____ in the purine ring:
(a) 2 (b) 4
(c) 5 (d)✓ 6

2. Which purine nucleotide is synthesized first in the purine nucleotide synthetic pathway?
(a)✓ IMP (b) AMP
(c) GMP (d) ATP

3. The end product of purine catabolism in humans is:
(a) Xanthine (b) Hypoxanthine
(c) Guanine (d)✓ Uric acid

4. Preformed ribose-5-phosphate is the starting material for the synthesis of _____ in the body:
(a)✓ Purines (b) Pyrimidines
(c) (a) & (b)
(d) None of the above

5. How much uric acid is formed per day by human beings normally?
(a) 6 to 8mg (b) 2 to 3gm
(c)✓ 600 to 800 mg
(d) None of these

6. Which carbon atom is contributed by respiratory CO_2 in the pyrimidine molecule?
(a)✓ 2 (b) 4
(c) 5 (d) 6

7. Deoxyribonucleotides are synthesized from:
(a) Deoxyribose
(b) Ribose
(c)✓ Ribonucleotides
(d) None of these three

8. Which of the following is the final end product of pyrimidine catabolism?
   - (a) Uric acid
   - (b)✓ CO_2 and water
   - (c) Acetyl CoA and succinyl CoA .
   - (d) β-alanine and p-isobutyrate

9. Hyperuricemia occurs in:
   - (a) Glucose-6-phosphatase deficiency
   - (b) Cancer
   - (c) Excessive ingestion of meat and fish
   - (d)✓ All of these three

10. Allopurinol is used to treat gout because:
    - (a) It increases excretion of uric acid in urine
    - (b) It helps catabolize uric acid
    - (c)✓ It inhibits formation of uric acid
    - (d) None of these

11. The cause of megaloblastic anemia in the disease orotic acitturia is:
    - (a) Folate deficiency
    - (b) B_{12} deficiency
    - (c)✓ Enzyme deficiency leading to decreased synthesis of pyrimidines
    - (d) Enzyme deficiency leading to decreased synthesis of purines

12. Carbamoyl phosphate synthetase is the first enzyme in the synthesis of:
    - (a) Purines and pyrimidines
    - (b)✓ Pyrimidines and urea
    - (c) Purines and urea
    - (d) None of these three

13. Which of the following statement is incorrect for DNA replication?
    - (a) Both stands are duplicated
    - (b) Duplication is semi conservative
    - (c)✓ Both stands are created de novo in each round of replication
    - (d) Duplication requires energy rich compounds

14. Tick the enzyme not involved in normal DNA replication:
    - (a) DNA polymerase I
    - (b) DNA polymerase III
    - (c) DNA ligase
    - (d)✓ Polynucleotide phosphorylase

15. The medical uses of enzyme restriction endonuclease include following except:
    - (a) Diagnosis of thalassemia
    - (b) Diagnosis of sickle cell anemia
    - (c) Diagnosis of cystic fibrosis
    - (d)✓ Diagnosis of pregnancy

16. The polymerase chain reaction requires all of the following except:
    - (a)✓ Highly purified DNA
    - (b) Deoxyribonucleotide phosphate
    - (c) A heat stable DNA polymerase
    - (d) A synthetic oligonucleotide primer

17. HIV Infects:
    - (a) Basophills (b) Macrophage
    - (c) Neutrophils
    - (d)✓ Lymphocyts and macrophages

18. The HIV-I virus causes AIDS. Which virus specific enzyme is most crucial for the replication of the HIV-I DNA genome?
    - (a) DNA polymerase
    - (b)✓ Reverse transcriptase
    - (c) RNA polymerase I
    - (d) DNA ligase

19. Which of the following change in DNA is induced by ultraviolet light?
    - (a) Frame shift mutation
    - (b) Nonsence mutation
    - (c)✓ Formation of thymine dimers
    - (d) Excision of pyrimidines

20. The protein which is wound around DNA is:
    - (a) Elastin (b) Fibrin
    - (c)✓ Histone (d) Keratin

21. The action of restriction endonuclease is on:
    - (a)✓ DNA (b) mRNA
    - (c) tRNA (d) rRNA

22. Okazaki fragments are use for:
    - (a) Protein synthesis
    - (b)✓ DNA synthesis

(c) RNA synthesis
(d) All of the above

23. PCR is:
(a) Genetic engineering mediated gene amplification
(b)✓ Enzymatic amplification of gene
(c) Recombinant DNA amplification of gene
(d) None of the above

24. The enzyme involved in uric acid formation is:
(a) Uricase (b) HGPRT
(c)✓ Xanthine oxidase
(d) None of the above

25. Anticodon is present in:
(a) mRNA (b)✓ tRNA
(c) rRNA (d) DNA

26. Conversion of UMP to TMP requires:
(a)✓ THF (b) ATP
(c) FMN (d) NAD

27. The four N atoms of purine ring are derived from:
(a)✓ Aspartate, glutamine and glycine
(b) Glycine and aspartate
(c) Urea & ammonia
(d) Glycine, glutamate and ammonia

28. Xeroderma pigmentosum is due to deficiency of:
(a) DNA polymerase
(b) DNA ligase
(c) DNA dependent RNA polymerase
(d)✓ Specific DNA endonuclease

29. Actinomycin D interferes with enzyme induction by combining with:
(a) rRNA (b) tRNA
(c) mRNA (d)✓ DNA

30. If the % of adenine in DNA is 20% the % of guanine will be:
(a) 10 (b) 20
(c)✓ 30 (d) 60

31. All of the following enzymes are involved in the excision repair of DNA except:
(a) DNA ligase (b) Exonuclease
(c) DNA polymerare
(d) None of the above

32. Which is the incorrect statement about Lesch Nyhan syndrome?
(a)✓ Partial deficiency of HGPRT
(b) Purine overproduction
(c) Self mutilation
(d) X-linked recessive trait

33. Enzyme utilized in virus replication is:
(a) DNA dependent RNA polymerase
(b) DNA dependent DNA polymerase
(c)✓ RNA dependent DNA polymerase
(d) Restriction endonuclease

34. Unwinding of DNA is done by:
(a) DNAase I
(b)✓ Topoisomerase I
(c) Ligase
(d) Restriction endonuclease

35. Gene that is involved in transcription but excluded before tran5lation is called:
(a) Extron (b)✓ Intron
(c) Operator gene
(d) Regulator gene

36. In gene cloning the largest segment is called:
(a) Bacteriophage
(b) Plasmid
(c)✓ Cosmid (d) None of these

37. Okazaki fragments are short pieces of DNA replicated:
(a)✓ Continuously in 5' → 3' direction
(b) Discontinuously in 5' → 3' direction
(c) Continuously in 3' → 5' direction
(d) Discontinuously in 3' → 5' direction

38. In post transcriptional processing of mRNA, "Splicing" refer to:

(a)✓ Joining of exons after removal of introns
(b) Addition of exons to mRNA
(c) Addition of introns to mRNA
(d) Removal of exons and joining of introns

39. The function of endonuclease is:
(a)✓ Cut DNA at specific sequences
(b) To point out the coding regions
(c) As enhancers
(d) To join the exons and introns

40. The approximate number of genes in human body is:
(a) 1 Lakh (f) 50 Thousand
(c)✓ 30 Thousand
(b) 10 Lakh

41. Which of the following promoter sequence in eukaryotes is centered at about 25 base pairs?
(a) GC Box (b) CAAT Box
(c)✓ TATA Box
(d) None of the above

42. The "Jumping genes" are also called:
(a) Antionco genes
(b) Trypnosomes
(c)✓ Transposones
(d) All of the above

16- PORPHYRIN METABOLISM

1. In porphyrin structure, four pyrrole rings are joined by ______ group:
(a)✓ Methylene (b) Vinyl
(c) Methyl (d) Hydroxyethyl

2. In uroporphyrin molecule, the substituent groups in the side chains are:
(a) Acetate and methyl
(b)✓ Acetate and propionate
(c) Propionate and methyl
(d) Methyl and vinyl

3. In coproporphyrin molecule, the substituent groups in the side chains are:
(a) Acetate and methyl
(b) Acetate and propionate
(c)✓ Propionate and methyl
(d) Methyl and vinyl

4. The enzyme ______ shows feedback inhibition by heme:
(a) ALA synthetase
(b) ALA dehydrase
(c) Heme synthetase
(d)✓ All of these three

5. In porphyrin biosynthesis the rate limiting step is:
(a)✓ ALA synthetase
(b) ALA dehydrase
(c) Heme synthetase
(d) All of these three

6. Lead blocks heme synthesis by inhibiting the enzyme:
(a) ALA synthetase
(b)✓ ALA dehydrase
(c) Heme synthetase
(d) All of these three

7. Iron is delivered to Hb-synthesizing cells by the process known as:
(a)✓ Endocytosis
(b) Exocytosis
(c) Diffusion
(d) Active transport

8. Bilirubin is formed from biliverdin by ______ reaction:
(a) Oxidation (b)✓ Reduction
(c) Conjugation
(d) Hydrolysis

9. In the liver, bilirubin is conjugated with:
(a) Sulphuric acid
(b)✓ Glucuronic acid
(c) Phosphoric acid
(d) None of these

10. In bilirubin molecule, conjugation with glucuronic; acid occurs with group:
(a) Propionate (b) Methyl
(c) Vinyl (d)✓ Hydroxylic

11. Which of the following statement is c;orrect about bilirubin?
(a) It is a water soluble compound
(b)✓ It is produced by Kuffer cells and is taken up by hepatocytes

(c) Derived primarily from the breakdown of lymphocytes
(d) It is normally secreted by hepatocytes into the blood stream

12. Jaundice results from all of the following except:
(a) High rate of degradation of erythrocytes
(b) Blockage of the cystic duct
(c)✓ Enterohepatic circulation of bile salt
(d) Destruction of the right junctions around the bile canaliculi

13. Heme is:
(a) Ferric protoporphyrin
(b)✓ Ferrous protoporphyrin
(c) Ferrous protoporphyrinogen
(d) Ferrous coproporphyrin

14. During Hb degradation the first bile pigment formed is:
(a) Bilirubin (b)✓ Biliverdin
(c) Porphyrin (d) Cholic Acid

15. Direct bilirubin is:
(a) Water soluble
(b) Bilirubin diglucuronide
(c) Gives pink color with diazo reagent
(d)✓ All above

16. The heme group in Hb is located in:
(a)✓ Hydrophobic pocket
(b) Negatively charged region
(c) Positive charged region
(d) Polar region

17. The defect in sickle cell hemoglobin Hb-S is due to replacement of:
(a)✓ β-6 glutamate by valine
(b) β-6 valine by glutamate
(c) α-6 valine by glutamate
(d) α-6 valine by phenylalanine

18. Sickling of RBC's in sickle cell anemia is due:
(a) Precipitation of polypeptide chains
(b) Distortion of erythrocyte cell membrane
(c)✓ Decrease in solubility of deoxyhemoglobin
(d) None of the above

17- MINERAL METABOLISM

1. Which fraction of plasma calcium is clinically more important?
(a) Total calcium
(b)✓ Ionic calcium
(c) Protein bound calcium
(d) Non-diffusible calcium

2. Serum calcium is _____ in tetany:
(a)✓ Low (b) High
(c) Normal (d) Unaltered

3. The deficiency of mineral ______ also cause tetany:
(a) Sodium (b) Potassium
(c)✓ Magnesium (d) Manganese

4. The body content of metal ______ is regulated by absorption rather than excretion:
(a) Copper (b)✓ Iron
(c) Calcium (d) Magnesium

5. Transferrin molecule binds atoms of iron:
(a) One (b)✓ Two
(c) Three (d) Four

6. Lysyl oxidase is a ______ containing enzyme.
(a) Iron (b)✓ Copper
(c) Zinc (d) Magnesium

7. In hypochromic microcytic anemia in animals due to copper deficient diet we find:
(a) Low level of serum iron
(b) Low level of serum copper
(c)✓ Both of these findings
(d) None of these findings

8. Poor wound healing is observed in deficiency of mineral:
(a) Chromium (b) Copper
(c)✓ Zinc (d) Iron

9. ______ is a selenium containing enzyme:

(a)✓ Glutathione peroxidase
(b) Peroxidase
(c) Catalase
(d) Glutathione reductase

10. Glucose tolerance factor (GTF) which has a role as cofactor of insulin contains the mineral ______
(a) Copper (b)✓ Chromium
(c) Selenium (d) Silicon

11. Excess fluorine is deposited in bones and teeth because:
(a) It cannot be excreted from the body
(b) It is not soluble in water
(c) It replaces phosphate ion from the bones
(d)✓ It replaces hydroxyl group of the bones

12. Fe absorption is increased by:
(a)✓ Ascorbic acid
(b) Phytates
(c) Phosphates (d) Oxalates

13. Zinc is Gomponent of the following compounds except:
(a)✓ Hexokinase
(b) Carbonic anhydrase
(c) Insulin
(d) Carboxypeptidase

14. If the potassium level is 39 mg %, calculate it in meo/liter:
(a) 1 (b) 3.9
(c)✓ 10 (d) 100

15. One milli mole of NaCl contains:
(a) 35.5 gm (b) 58.3 gm
(c) 35.5 gm (d)✓ 58.5 mg

16. Cytochrome oxidase contains:
(a) Fe (b) Cu
(c)✓ (a) & (b) (d) None of these

17. Copper deficiency affects the formation of collagen by reducing the activity of:
(a) Glucosyl transferase
(b) Galactosyl transferase
(c) Prolyl hydroxylase
(d)✓ Lysyl oxidase

18- NUTRITION

1. Milk is deficient in which nutrient?
(a) Protein (b)✓ Iron
(c) Carbohydrate
(d) Fats

2. Wheat is deficient in which nutrient?
(a) Protein (b) Iron
(c) Carbohydrate
(d)✓ Lysine

3. The yellow colour of egg yolk is due to the presence of:
(a)✓ Riboflavin (b) β-carotene
(c) Biotin (d) Pigment

4. Mango has remarkatlly high content of:
(a) Riboflavin (b)✓ Carotenes
(c) Sucrose (d) Protein

5. The highest content of vitamin C is present in:
(a) Orange (b) Lemon
(c) Mango (d)✓ Amla

6. Which edible oil has the highest content of PUFA?
(a)✓ Safflower oil
(b) Sunflower oil
(c) Soya bean oil
(d) Ground nut oil

7. BMR is higher in:
(a) Males (b) Summer
(c)✓ Winter (d) Old age

8. What should vegetarians eat more to compensate for protein in the diet?
(a) Wheat (b) Rice
(c)✓ Pulses (d) Milk

9. Marasmus is due to deficiency of ______ in the diet:
(a) Protein
(b)✓ Protein as well as calories
(c) Vitamins (d) Iodine

10. What should an obese person eat more to help reduce weight?
(a)✓ Proteins (b) Fats
(c) Carbohydrates

(d) Vitamins

11. Kwashiorkor is due to deficiency of ______ in the diet:
(a)✓ Proteins (b) Vitamin A
(c) Iron
(d) Protein as well as calories

12. A balanced diet is one which takes care of:
(a) Growth
(b) Physical activity
(c) Maintenance of body
(d)✓ All of these three

13. Proteins have highest SDA because:
(a) They have highest energy content
(b) They have nitrogen
(c) They take much longer to digest
(d)✓ They form urea which requires energy

14. Over nutrition is generally known as:
(a) High blood pressure
(b) Disease of digestive system
(c)✓ Obesity (d) Goiter

15. Heat energy is measured in:
(a) Joules (b) Watt
(c)✓ Calorie (d) Ampere

16. The caloric value of food is determined by a special apparatus called:
(a) Calorimeter (b) Colorimeter
(c)✓ Bomb Calorimeter
(d) Thermometer

17. BMR can be determined by:
(a) Tissot method
(b) Douglas method
(c) Benedict – Roth method
(d)✓ All of the above.

18. Respiratory quotient (RQ) for carbohydrate is:
(a) 0.5 (b)✓ 1
(c) 1.5 (d) 2

19. When carbohydrates are converted into fats in the body RQ will:
(a)✓ Rise (b) Fall
(c) Constant (d) None of these

19- GENETICS AND MOLECULAR BIOLOGY

1. A sex-linked disease means:
(a) A disease acquired due to sexual act
(b) A disease occurring only in females
(c) A disease associated with the sexual act
(d)✓ A disease due a abnormal gene on X - chromosome

2. Give an example of a molecular disease characterized by reduction or absence of an essential enzymatic activity:
(a) Diabetes mellitus
(b) Ketosis
(c) Fatty liver
(d)✓ Crigler-Najjar syndrome

3. Galactosemia is due to deficiency of enzyme:
(a) Galactokinase
(b)✓ Galactose-I-phosphate uridyl transferase
(c) UDP - glucose -4-epimerase
(d) Lactose synthetase

4. In which disease the patient's urine darkens on standing?
(a) Phenyl ketonuria
(b)✓ Alkaptonuria
(c) Albinism
(d) Hartnup disease

5. Mental retardation occurs in the patients of:
(a)✓ Phenyl ketonuria
(b) Alkaptonuria
(c) Albinism (d) None of these

6. In which disease the patient's urine smells like burnt sugar?
(a)✓ Maple syrup urine disease
(b) Primary hyperoxaluria
(c) Cystinosis
(d) Hartnup disease

7. Give an example of genetic disease due to absence of a physiologically essential substance other than enzyme:
(a)✓ Hemophilia (b) Cystinuria
(c) Gaucher's disease
(d) Mucopolysaccharodosis

8. Give an example of genetic disease characterized by presence of an altered and abnormal protein:
(a) Fabry's disease
(b) Tay-Sach's disease
(c)✓ Sickle cell anemia
(d) Hemophilia

9. Give an example of genetic disease due to alteration in cellular transport of a metabolite:
(a) Wilson's disease
(b) Menke's disease
(c) Lesch-Nyhan syndrome
(d)✓ Fanconi syndrome

10. In which disease the patient excretes red fluoroscent urine?
(a) Alkaptonuria
(b)✓ Porphyria
(c) Fanconi syndrome
(d) Hematuria

11. In which genetic disease, the patient has a tendency of self-mutilation?
(a)✓ Lesch-Nyhan syndrome
(b) Gout
(c) Orotic aciduria
(d) Fanconi syndrome

12. In which glycogen storage disease there is accumulation of abnormal glycogen molecule?
(a) Glycogen storage disease VII
(b)✓ Glycogen storage disease IV (Anderson's disease)
(c) Glycogen storage disease V (McArdle's disease)
(d) Glycogen storage disease I (Von Gierke's disease)

13. In which glycogen storage disease there is abnormal quantity of glycogen accumulated in muscles?
(a) Glycogen storage disease Type VII
(b) Glycogen storage disease Type IV
(c)✓ Glycogen storage disease Type V
(d) Glycogen storage disease Type I

14. A gene consists of:
(a) Chromosome
(b) RNA
(c) DNA
(d)✓ A part of DNA

15. Genetics is the science of study of:
(a) Gene (b) Heredity
(c) Molecular diseases
(d)✓ All of the above

16. An inborn error of metaboli5m may be caused by:
(a) An essential enzymatic activity may appear to be reduced or absent
(b) A physiologically essential substance may be missing
(c) An abnormal protein may be present
(d)✓ All of the above

17. Which of the following is a disorder of lipid metabolism?
(a) Crigler - Najjar syndrome
(b)✓ Gauchers disease
(c) Maple syrup urine disease
(d) All of these

18. Thalassemia is also known as:
(a) Cooley's anemia
(b) Mediterranean anemia
(c)✓ (a) & (b) (d) None of these

19. Agammaglobulinemia is more common in to:
(a)✓ Male (b) Female
(c) Equal in both
(d) Sometimes in males, sometimes in females

20. The coding region of DNA is called as:
(a)✓ Exons (b) Introns
(c) Codons

(d) Flanking sequence

21. In eukaryotic genes the special regions which increase the rate of transcription are called:
(a) Transposones
(b)✓ Enhancers
(c) Silencers (d) Codons

22. The extrachromosomal genetic material in bacteria is:
(a) Phages (b) Cosmid
(c)✓ Plasmid
(d) Chimeric DNA

23. Which enzyme is used for the synthesis of cDNA from mRNA?
(a) Polynucleotide kinase
(b)✓ Reverse transcriptase
(c) DNA ligase
(d) BAL 31 nuclease

20- HORMONES

1. The hormones are effective in concentration:
(a)✓ 1 M to 10^{-1} M
(b) 10^{-1} M to 10^{-3} M
(c) 10^{-3} M to 10^{-6} M
(d) 10^{-7} M to 10^{-12} M

2. cAMP is the second messenger in the action of hormone:
(a) Insulin (b)✓ Glucagon
(c) Thyroxine (d) Estrogen

3. Which hormone action requires transcription and translation of DNA genome?
(a)✓ Estrogen (b) Epinephrine
(c) Cholecalciferol
(d) Insulin

4. cAMP is synthesized by:
(a)✓ Adenyl cyclase
(b) Phosphodiesterase
(c) Epinephrine
(d) Cell membrane receptors

5. How many sub units are present in G-protein?
(a) One (b) Two
(c)✓ Three (d) Four

6. Which of the following answer is not correct for nitric oxide?
(a)✓ It is laughing gas
(b) It is synthesized by NO synthetase
(c) It causes muscle relaxation
(d) It is produced from arginine

7. The action of phospholipase C produces:
(a) Phosphoric acid and arachidonic acid
(b) Glycerol and fatty acids
(c)✓ Inositol triphosphate and diacyl glycerol
(d) None of these three

8. Calmodulin has ______ calcium binding sites:
(a) One (b) Two
(c) Three (d)✓ Four

9. Which hormone receptor has tyrosine kinase activity?
(a) Thyroxine (b) Testosterone
(c) Glucagon (d)✓ Insulin

10. Which of the following statement is not correct for prostaglandins?
(a) Prostaglandins are derivatives of prostanoic acid
(b)✓ They are only found in the prostate secretion
(c) They are synthesized from arachidonic acid
(d) They are inactivated by a specific dehydrogenase

11. Which of the following compound is not synthesized by endo-peroxide synthesizing complex?
(a) Prostaglandin
(b)✓ Leucotrien C
(c) Prostacyclin
(d) Thromboxane

12. What is the difference between AMP and cAMP?
(a) AMP has ribose while cAMP has deoxyribose

(b) AMP has straight chain structure while cAMP has ring structure

(c)✓ AMP has one alcoholic group esterified with phosphoric acid while cAMP has two

(d) AMP has one phosphate while cAMP has diphosphate

13. Which enzyme is affected first by the binding of epinephrine to the liver cell?

(a) Protein kinase

(b) Adenyl cyclase

(c)✓ Phosphorylase A

(d) Phosphorylase B

14. The enzyme cyclooxygenase converts arachidonic acid into:

(a) Linoleic acid

(b) Prostaglandin F3α

(c) Prostaglandin Flα

(d)✓ Prostaglandin G2

15. The anti-inflammatory and analgesic effects of aspirin are due to the fact that it is:

(a)✓ A cyclooxygenase inhibitor

(b) A phospholipase inhibitor

(c) A stimulator of PGE2 synthesis

(d) A stimulator of PGF2α synthesis

16. Choose the incorrect statement about cAMP:

(a) Hormone binding to receptor activates adenyl cyclase

(b) Adenyl cyclase converts ATP to cAMP and PPi

(c) cAMP is converted to AMP by phosphodiestrase

(d)✓ Caffeine decreases cAMP levels

17. Choose the incorrect statement about the physiological effects of thyroxine:

(a)✓ Increase in oxidative phosphorylation

(b) Increase in oxygen consumption in muscle

(c) Increase in oxygen utilization

(d) Increase in heat production.

18. Glucagon and epinephrine are similar in the respect that both:

(a) Promote glycogenolysis in liver

(b)✓ Promotes activation of liver phosphorylase

(c) Reduce blood glucose levels

(d) Are formed by the α cells of pancreas

19. The immediate precursor of testosterone is:

(a) Aldosterone

(b)✓ Pregnanolone

(c) Estrogen

(d) Methyltestosterone

20. All of the following inhibits platelets aggregation except:

(a)✓ Thromboxin A_2

(b) PGI_2

(c) Aspirin (d) Dipiridamol

21. Choose the true statement regarding nitric oxide in human beings:

(a) Produced from NO_2

(b) Produced only in macrophage

(c) Potent vasoconstrictor

(d)✓ Produced from arginine

22. The following cytokine6 are' produced mainly by T-lymphocyte6 except:

(a)✓ IL-l (b) IL-2

(c) IL-3 (d) IL-5

23. The anti-inflammatory drugs - aspirin, indomethacin and ibuprofen act by inhibiting the action of enzyme:

(a) Prostacyclin synthetase

(b) Lipooxygenase

(c) Thromboxane synthetase

(d)✓ Cyclooxygenase

24. Insulin receptors are:

(a) Lipoprotein in nature

(b)✓ Dimers having α_2 and β_2 configurations

(c) A subunit is involved in signal transduction

(d) Separates out as discrete sites on insulin binding

Cancer

21- CANCER

1. The cancer (malignant) cells are characterized by:
   (a) Loss of growth control
   (b)✓ Invasiveness & metastasis
   (c) Swelling
   (d) Inflammation
2. The enzyme reverse transcriptiase synthesizes:
   (a) RNA from DNA
   (b)✓ DNA from RNA
   (c) Protein from DNA
   (d) Protein from RNA
3. Which of the following gene is not a tumor suppressor gene?
   (a) p^{53} (b)✓ myc
   (c) DCC (d) RB
4. Select the mechanism which does not involve activation of protooncogenes to oncogenes:
   (a)✓ Frame saift mutation
   (b) Point mutation
   (c) Promoter insertion
   (d) Enhancer insertion
5. Select the statement which is not true for 'tumor markers':
   (a)✓ All tumor markers are produced by cancer cells
   (b) Tumor markers are used to diagnose cancer
   (c) All tumor markers are proteins
   (d) Tumor markers can be used to detect relapse or recurrence of cancer
6. Which of the following which is not a tumor marker?
   (a) CEA (b) AFP
   (c)✓ EGF (d) PSA
7. Which of the following is not a property of cancer cells?
   (a) Diminished or unrestricted control of growth
   (b) Capability of invasion of local tissues
   (c) Capable of spreading to distant parts of body by metastasis
   (d)✓ All these three are the properties of the cancerous cells
8. Which of the following is the cancer of skin?
   (a) Adenocarcinoma
   (b) Xeroderma pigmentosa
   (c)✓ (a) & (b) (d) None of these
9. Burkitt's lymphoma is caused by:
   (a) Hepatitis B virus
   (b) Human papilloma virus
   (c)✓ Epstein - Barr virus
   (d) None of these
10. Which of the following disease is caused by human papilloma virus?
    (a) Multiple warts
    (b) Cervical cancer
    (c)✓ (a) & (b) (d) None of these
11. Which of the following statement is incorrect?
    (a) All oncogenic RNA viruses are retrovirus
    (b) DNA virus forms a stable association with host cell
    (c) (a) & (b) (d)✓ None of these
12. Growth factors of cancer are:
    (a) Usually polypeptides
    (b) Can initiate cell migration. differentiation and tissue remodeling
    (c) Can affect many types of cells
    (d)✓ All of these

22- ACID – BASE BALANCE

1. Which are the two most important determinants of blood pH?
   (a) Carbonic acid and hemoglobin
   (b) Phosphoric acid and phosphate
   (c) Plasma proteins and bicarbonate
   (d)✓ Carbonic acid and bicarbonate
2. The pH of blood remains normal as long as the ratio of carbonic acid to bicarbonate is:
   (a)✓ 1: 20 (b) 1: 10
   (c) 20: 1 (d) 10: 1

3. The pH of serum in case of compen5ated respiratory acidosis due to pneumonia or asthma is:
(a) Decreased (b) Increased
(c)✓ Normal (d) None of these

4. In patients of uncontrolled diabetes mellitus _____ is observed:
(a)✓ Metabolic acidosis
(b) Respiratory acidosis
(c) Metabolic alkalosis
(d) Respiratory alkalosis

5. The uncontrolled diabetes mellitus results into acidosis due to accumulation of:
(a) Sugar (b) Acetone
(c) Cations
(d)✓ Acetoacetic acid and p-hydroxy butyric acid

6. The prolonged vomiting may cause:
(a) Metabolic acidosis
(b) Respiratory acidosis
(c)✓ Metabolic alkalosis
(d) Respiratory alkalosis

7. The excessive diarrhoea may cause:
(a)✓ Metabolic acidosis
(b) Metabolic alkalosis
(c) Respiratory acidosis
(d) Respiratory alkalosis

8. The normal pH of blood is:
(a) 7.8 (b)✓ 7.4
(c) 7.2 (d) 7.6

9. In the chloride shift:
(a) Potassium accompanies each bicarbonate that leaves the erythrocyte
(b) Bicarbonate leaves the erythrocyte
(c) Hydrogen ion leaves the erythrocyte for each chloride ion that enters
(d)✓ Bicarbonate leaves the erythrocyte in exchange to chloride ion

10. The most important buffer of plasma is:
(a) Phosphate buffer
(b)✓ Carbonic acid - Bicarbonate buffer
(c) Protein buffer
(d) Hb buffer

11. The chief urinary buffer is:
(a)✓ Phosphate buffer
(b) Bicarbonate buffer
(b) Protein buffer
(c) Ammonia buffer

12. Respiratory acidosis may be caused by:
(a) Starvation
(b) Hyperventilation
(c)✓ Emphysema
(d) Vomiting

13. Metabolic acidosis may be produced by:
(a) High altitude
(b) Excessive vomiting
(c)✓ Starvation
(d) None of the above

14. In respiratory alkalosis all are true except:
(a) Hyperventilation is present
(b) Decrease in pCO_2
(c) Decrease in the ratio of H_2CO_3/HCO^-_3
(d)✓ Increase in the ratio of H_2CO_3/HCO^-_3

15. Indicate the change occurring in urine in cases of metabolic acidosis:
(a) Increase in ammonia
(b) Decrease in ammonia
(c) Decrease in lactic acid
(d) Increase in bicarbonate

23- WATER AND ELECTROLYTE BALANCE

1. The daily intake of water is around:
(a)✓ 1- 2 liters (b) 5 -10 liters
(c) 0.5 -1 liter (d) 3 - 5 liters

2. The dehydration may be caused by:
(a) Kidney failure
(b) Liver disease
(c)✓ Excessive diarrhoea
(d) Jaundice

3. Which is the predominant cation of intracellular fluid?
(a) Sodium (b)✓ Potassium
(c) Calcium (d) Magnesium

4. Which is the predominant cation of extracellular fluid?
(a)✓ Sodium (b) Potassium
(c) Calcium (d) Magnesium

5. Which is the predominant anion of extracellular fluid?
(a) Bicarbonate
(b) Phosphate
(c)✓ Chloride (d) Sulphate

6. Which is the predominant anion of intracellular fluid?
(a) Bicarbonate (b)✓ Phosphate
(c) Chloride (d) Sulphate

7. A decreased level of chloride in plasma without concomitant decrease in sodium is found in:
(a) Diarrhoea (b) Fever
(c) Burns (d)✓ Vomiting

8. The absorption of water occurs in which part of the intestine?
(a) Lower small intestine
(b)✓ Upper small intestine
(c) Ascending limb
(d) Descending limb

9. Water intake and output depends on the:
(a) Body activity
(b) Environmental temperature
(c) Nature of food taken
(d)✓ All of the above

10. Water intake is mainly regulated by:
(a) Excretion through kidneys
(b) Skin
(c)✓ Thirst (d) Food

11. Sodium pump maintains:
(a)✓ Low intracellular level of sodium and relatively higher extracellular level
(b) High intracellular level of sodium and relatively lower extracellular level
(c) Low intracellular level of sodium as well as low extracellular level
(d) High intracellular level of sodium as well as high extracellular level

12. Which of the following organ plays a major role in the maintenance of electrolyte balance?
(a) Skin (b) Lungs
(c)✓ Kidneys (d) Spleen

13. Which ion is lost from the affected tissue in case of burns?
(a) Sodium (b)✓ Potassium
(c) Magnesium (d) Calcium

24- ORGAN FUNCTION TESTS

1. The determination of ______ is a test for pancreatic function:
(a) Pepsin (b)✓ Amylase
(c) Trypsin (d) LDH

2. In which disease free acidity as well as total acidity is very low?
(a) Peptic ulcer
(b) Gastric cancer
(c)✓ Pernicious anemia
(d) Malasorption syndrome

3. What is the normal level of protein bound iodine?
(a) 400 - 800 ng/100 ml
(b)✓ 4 - 8 μg/100 ml
(c) 1- 2 μg/100 ml
(d) 1-2 μg/ml

4. What is the normal level of bilirubin?
(a)✓ Less than 1 mg %
(b) 2-3mg%
(c) Less than 1 g %
(d) Less than 1jlg %

5. The determination of ______ is a common liver function test:
(a) Pepsin (b) Lipase
(c) Trypsin (d)✓ GPT

6. The blood level of urea is increased in diseases of:
(a) Liver (b)✓ Kidney
(c) Thyroid (d) Pancreas

7. _______ indicates glomerular filtration rate:
(a) Blood urea
(b) Urea clearance test
(c)✓ Insulin clearance test
(d) Phenolsulphthlein test

8. Which of the following tests is not a test for malabsorption?
(a) Schilling's test
(b) Fecalfattest
(c) Xylose absorption test
(d)✓ Diagnex blue test

9. ______ is collected in Schilling's test to assess malabsorption:
(a)✓ Urine (b) Stool
(c) Gastric juice
(d) Blood

10. ______ is collected in Diagnex blue test for tubeless gastric analysis:
(a) Gastric juice
(b) Stool
(c)✓ Urine (d) Blood

11. Normal urea clearance is about:
(a) 4 ml / min (b) 22 ml / min
(c)✓ 44 ml / min (d) 88 ml / min

12. The simplest test of impaired renal tubular function is:
(a)✓ Specific gravity
(b) Blood urea
(c) Blood creatinine
(d) Osmolality determination

13. The normal daily fecal fat excretion is:
(a) Nil (b)✓ 5 gm
(c) 5 -10 gm (d) 15 gm

14. Sulkowitch test is done for:
(a) Serum calcium
(b)✓ Urinary calcium
(c) Both of the above
(d) None of the above

25- TECHNIQUES

1. The photocell is a device which:
(a)✓ Converts light into electricity
(b) Is used in taking photographs
(c) Lights the torch
(d) Is an essential part of a plant

2. If a coloured solution is taken in a test tube, the intensity of colour of the solution in the test tube will appear to be ______ as that contained in the bottle:
(a) Same (b)✓ Less
(c) More (d) Unchanged

3. The radiations in UV range are measured in a:
(a) Colorimeter
(b) Fluorimeter
(c) Flame photometer
(d)✓ Spectrophotometer

4. What is fluorescence?
(a) Color of a substance
(b)✓ Light emitted by a substance when it is irradiated with UV radiation
(c) Light emitted by a substance when it is heated
(d) None of the above

5. The flame photometer is used to measure:
(a) Any colored substance
(b)✓ Sodium and potassium
(c) Any volatile substance
(d) Any inflammable substance

6. The universal method of separation is:
(a)✓ Chromatography
(b) Electrophoresis
(c) Centrifugation
(d) Dialysis

7. Which one is the most commonly employed technique in the clinical and biochemical field for the quantitative analysis of hormones, steroids and drugs?
(a) Radioimmunoassay
(b)✓ Enzyme immunoassay
(c) (a) & (b) (d) None of these

8. Which one of the following is the major disadvantage of RIA?
(a)✓ High cost of equipment and reagents
(b) Radioactive hazards

(c) Time consuming
(d) All of the above

9. Which of the following is required for RIA?
(a) Pure antigen
(b) Labeled antigen
(c) Suitable antiserum
(d)✓ All of the above

10. The application of ELISA includes:
(a) Bacterial toxins
(b) Auto antibodies
(c) Antiviral antibodies
(d)✓ All of the above

11. The separation of substances on electrophoresis depends on their:
(a) Size (b) Shape
(c)✓ Charge
(d) None of the above

12. The electric current used for electrophoretic separation is:
(a) Alternating current
(b)✓ Direct current
(c) Static current
(d) Anyone of these three

13. The fastest moving plasma protein is:
(a)✓ Albumin (b) α-globulin
(c) γ-globulin (d) β-globulin

14. The slowest moving plasma protein is:
(a) Albumin (b) α-globulin
(c)✓ γ-globulin (d) β-globulin

15. The quantitation of protein bands in paper or gel electrophoresis can be done by:
(a) Elution (b) Densitometry
(c)✓ (a) & (b) (d) None of these

16. The fastest moving hemoglobin on electrophoresis at pH 8.6 is:
(a)✓ Hb A (b) Hb F
(c) Hb S (d) Hb C

17. In adsorption chromatography, substances are separated on the basis of their:
(a)✓ Affinity with adsorbent
(b) Solubility
(c) Size (d) Shape

18. In paper chromatography substances are separated on the basis of their:
(a)✓ Partition coefficient between two liquids
(b) Adsorption on paper
(c) Size of particles
(d) Mass of particles

19. As per Beer - Lambert law, the absorption of light by a colored substance in solution depends upon:
(a) The nature of incident radiation
(b) The nature of colored substance
(c) The concentration of substance
(d)✓ All of these three

20. In a flourometer, the photocell measures:
(a) Incident light
(b) Absorbed light
(c) Transmitted light
(d)✓ Fluorescent light

21. In a colorimeter, the photocell measures:
(a) Incident light
(b) Absorbed light
(c)✓ Transmitted light
(d) None of these

22. In a flame photometer, the m measurement is made of:
(a) Absorbed light
(b) Incident light
(c)✓ Emitted light
(d) Transmitted light

26- ENVIRONMENTAL HEALTH HAZARDS

1. A good example of nature's activity causing pollution is:
(a) Rain (b) Drought
(c)✓ Volcanic activity
(d) Storm

2. Indicate which is not an example of pollution cause by nature?
(a) Selenosis (b) Silicosis
(c) Flurosis
(d)✓ Hemochromatosis

3. What is the root cause of environmental pollution?
(a) Urbanisation
(b) Industrialisation
(c)✓ Population explosion
(d) None of these

4. The pesticide residules are less likely to be found in:
(a) Fruits (b) Vegetables
(c) Grain (d)✓ Edible oils

5. Why CFC's are harmful?
(a) They are toxic gases
(b) They contain highly reactive fluorine
(c)✓ They cause ozone hole in atmosphere
(d) All of these

6. Which is the most sensitive organ to lead toxicity?
(a) Liver (b) Kidney
(c) Brain (d)✓ Bone marrow

7. What is the most common cause of exposure to cadmium?
(a) Tobacco smoking
(b) Diet
(c)✓ Drinking water
(d) Atmospheric air

8. Mercurials have an exceptionally high affinity for ______ hence they combine with it in the body:
(a)✓ -SH groups (b) Proteins
(c) Enzymes
(d) Cell membrane

9. Indicate which is not the source of mercury contamination:
(a) Fairness creams
(b) Dental amalgams
(c)✓ Tungsten bulbs
(d) Burning of coals

10. What is the long term danger of a nuclear explosion?
(a) Release of massive amount of heat
(b)✓ Release of radioactive elements
(c) Release of smoke
(d) Release of noise

11. Why Strontium -90 is dangerous to human health?
(a) It is a radioactive element
(b) It mimics calcium and hence deposited in bones
(c) It has a long half life
(d)✓ All of these

12. Why radiation is harmful to living beings?
(a) It travels very fast
(b) It penetrates matter
(c)✓ It ionizes atoms
(d) It has high energy

13. The ozone layer is present in:
(a) Exosphere
(b) Mesosphere
(c)✓ Stratosphere
(d) Troposphere

14. Which of the following gas reduces the oxygen carrying capacity of blood if present in excess in air?
(a) Carbon dioxide
(b)✓ Ozone
(c) Chlorine (d) Ammonia

15. Which of the following is the most common gaseous air pollutant?
(a) Carbon dioxide
(b) Ozone
(c) Nitric oxide
(d)✓ Ammonia

16. Which of the following disease is common among coal miners?
(a) Asbestosis
(b)✓ Black lung disease
(c) (a) & (b) (d) None of these

27- DETOXICATION

1. The detoxication is:
(a) Conversion of a toxic compound into nontoxic compound

(b)✓ Metabolism of foreign compounds
(c) Metabolism of drugs
(d) Conversion of complex molecules into simpler ones

2. In which organ biotransformation of xenobiotics mainly occur in the body:
(a) Kidney (b) Lungs
(c) Gut (d)✓ Liver

3. What is the function of heme groups of cytochrome P450?
(a) Transfer electrons
(b) Transfer hydrogen
(c)✓ Convert molecular oxygen into active form
(d) None of these

4. Predict the metabolic fate of aspirin (acetyl salicylic acid).
(a) Oxidation (b) Reduction
(c)✓ Hydrolysis (d) Conjugation

5. Predict the metabolic fate of sulfonamide drugs:
(a) Oxidation (b) Reduction
(c)✓ Hydrolysis
(d) Conjugation by acetylation

6. Predict the metabolic fate of benzene:
(a) Hydrolysis (b) Reduction
(c)✓ Hydroxylation
(d) Conjugation

7. Predict the metabolic fate of a ketone:
(a) Oxidation (b)✓ Reduction
(c) Hydroxylation
(d) Hydrolysis

8. Predict the metabolic fate of a protein drug (Procaine penicillin):
(a) Oxidation (b) Reduction
(c)✓ Hydrolysis (d) Conjugation

9. ______ is not the undesirable side effect of xenobiotic metabolism:
(a)✓ Apoptosis (b) Cell injury
(c) Allergy (d) Cancer

10. ______ is not concerned with metabolism of foreign compounds:
(a) Cytochrome P-450
(b)✓ Cytochrome b
(c) Glutathione
(d) Metallothioneine

11. Which of the following is considered the most versatile biocatalyst?
(a) All monooxygenases
(b)✓ Cytochrome P450
(c) Cytochrome bs
(d) Warferin

12. Which of the following is an inducer of cytochrome P450?
(a) Warfarin
(b) Phenobarbitone
(c) Ethanol
(d)✓ All of the above

13. In cytochrome P-450, P stands for:
(a) Protein (b)✓ Pigment
(c) Polymer
(d) None of the above

14. In how many phases xenobiotics are metabolized?
(a) 1 (b)✓ 2
(c) 3 (d) 5

15. Characteristic feature of cyt- P450 are:
(a) Chemically they are hemoproteins
(b) They require NADPH
(c) They are inducible
(d)✓ All of the above

==========

BIOCHEMISTRY MCQs OF VITAMINS, MINERALS & NUTRITION

Tick the correct one:

1. Which of the following co-factor is required for the synthesis of gamma amino butyric acid (GABA), serotonin, epinephrine, dopamine and histamine from their respective amino acid precursors:
   - (a) Tetrahydrobiopterin
   - (b) Tetrahydrofolate
   - (c)✓ Pyridoxal phosphate
   - (d) Thiamine pyrophosphate
   - (e) Vitamin B_{12}
2. The effect of a light impulse in the retina is:
   - (a) Isomereization of trans- retinal to cis-retinol
   - (b) Reduction of 11 cis-retinol to cis-retinol
   - (c) Isomerization ofcis- retinol to tran-retinol
   - (d) Reduction of trans- retinal to trans-retinol
   - (e)✓ Isomerization of 11 cis-retinal to trans-retinal
3. Two vitamins whose derivatives are involved in the transformation of serine to glycine are:
   - (a) B_{12} and nicotinamisde
   - (b)✓ Folic acid and vitamin B_6
   - (c) B_6 and B_{12}
   - (d) Folic acid and B_{12}
   - (e) Pyridoxal phosphate and B_{12}
4. A women with a lactase deficiency who eats no dietary products:
   - (a) Cannot produce mucopolysaccharodes that contains galactose
   - (b) Cannot produce lactose during lactation
   - (c)✓ Is likely tom suffer from a calcium deficiency
   - (d) Is likely to have high cellular levels of galactose 1 Phosphate
   - (e) Cannot produce mucopolysaccharides that contain mannose
5. Which one of the following nutrients is a precursor for a co-factor that carries one carbon groups of different oxidation states?
   - (a) Methioinine
   - (b) Thiamine
   - (c)✓ Folic acid
   - (d) Biotin (e) Pyridoxine
6. Which one of the following would be seen in a patient with a severe thiamine deficiency?
   - (a) Decreased serum levels of pyruvate and lactate
   - (b) Increased clotting time of blood
   - (c) Low red cell tranamknase activity
   - (d) Increased urinary excretion of xanthurenic acid following a tryptophan load
   - (e)✓ Decreased transketolase activity in RBCs
7. Consumption of raw eggs, which contain the protein avidin could lead to deficiency resulting in:
   - (a) An Inhibition of dacrboxylation reactions
   - (b) An inability to form acetylcholine
   - (c) A decrease in Co-A formation
   - (d) An increase in trans aminations
   - (e)✓ An inhibition of carboxylation reactions
8. The active form of the cofactor required for oxidative decarboxylation reactions is:
   - (a) Thiamine mono phiosphate
   - (b) Thiamine
   - (c)✓ Thiamine pyrophosphate
   - (d) Thiamine triphosphate
   - (e) Hydoxyethyl thiamine proiphosphate.

9. Vitamin K plays an essential role in:
   (a) Dissolving blood clots
   (b)✓ Post-translational modification of some proteins
   (c) Maintenance of the retina integrity
   (d) Preventing bile stasis
   (e) Biosynthesis of factor XI

10. The nutritional role of the carotenoids lies in their conversion in vivo to:
   (a) Ascorbic acid
   (b) Cobalamine
   (c) Folic acid
   (d) Prostaglandins
   (e)✓ Vitamin A

11. Which of the following vitamins would most likely become deficient in a person who develops a completely carnivorous lifestyle?
   (a) Thiamine
   (b) Niacin
   (c) Cobalamine
   (d) Panthothenic acid
   (e)✓ Vitamin C

12. Children with autism and other disorders with mental disability are often put on megavitamin supplements despite no scientific evidence of benefit. Although most vitamins are harmless in excess, merely being excreted in urine, vitamin A can be toxic. Which of the following statements regarding vitamin A is true:
   (a) It is not an essential vitamin
   (b) It is related to tocopherol
   (c)✓ It is component of rhodopsin
   (d) It is derived from ethanol
   (e) It is also known as opsin

13. Which of the following foods should be emphasized for individuals with peripheral neuritis, insomnia, mouth and skin irritation and diarrhea?
   (a) Human and cow (not gout) milk, uncooked fruits and vegetables
   (b) Milk, eggs, meat and fruits
   (c)✓ Vegetables, cereals and fruits
   (d) Liver, poultry and eggs
   (e) Egg yolks, fish oils and leafy vegetables

14. Which one of the following is definitely associated with a human disease when deficient?
   (a) Arsenic (b) Lead
   (c) Zinc (d) Antimony
   (e)✓ Vanadium

15. A homeless person is brought into the emergency room with psychiatric imagery and alcohol on his breath. Which of the following compounds is most important to administer?
   (a) Glucose (b) Niacin
   (c) Nicotinic acid
   (d)✓ Thiamine (e) Riboflavin

16. An important etiologic factor in kwashiorkor is:
   (a) Excess dietary ethionine
   (b) Steatorrhea
   (c) Anemia
   (d)✓ Dietary protein deficiency
   (e) Dietary mineral deficiency

17. A term infant is born at home and does well with breast-feeding. Two days later, the mother calls frantically because the baby is bleeding from the umbilical cord and nostrils. The most likely cause is:
   (a) Deficiency of vitamin C due to a citrus-poor diet during pregnancy
   (b) Hypervitaminosis A due to ingestion of beef liver during pregnancy
   (c)✓ Deficiency of vitamin K because infant intestines are sterile
   (d) Deficiency of vitamin K because of disseminated intravascular coagulation (disseminated clotting due to infantile sepsis)

(e) Deficiency of vitamin E due to maternal malabsorption during pregnancy.

18. Humans most easily tolerate a lack of which of the following nutrients?
(a) Protein (b) Iodine
(c) Carbohydrate
(d)✓ Lipid (e) Calcium

19. Given the information that a 70-kg man is consuming a daily average of 275 g of carbohydrate, 75 g of protein, and 65 g of lipid, one can draw which of the following conclusions?
(a) Total energy intake per day is approximately 3000 kcal
(b) About twenty percent of the calories are derived from lipids
(c) The diet does not contain a sufficient amount of dietary fiber
(d) The proportions of carbohydrate, protein, and lipid in the diet conform to the recommendations of academic groups and government agencies
(e) The individual is in nitrogen balance.

20. Which one of the following statements concerning dietary lipid is correct?
(a) Corn oil and soybean oil are examples of fats rich in saturated fatty acids
(b) Triacylglycerols obtained from plants generally contain less unsaturated fatty acids than those from animals
(c) Olive oil is rich in saturated fats
(d)✓ Fatty acids containing double bonds in the trans-configuration, unlike the naturally occurring cis isomers, raise plasma cholesterol levels
(e) Coconut and palm oils are rich in polyunsaturated fats

21. Pyridoxine deficiency can occur in tubercular patients taking:
(a)✓ Isoniazid
(b) Paraminosalycilate
(c) Streptomycin
(d) Thiacetazone
(e) Diclofenac sodium

22. Consumption of raw egg white can produce neurological abnormalities by blocking the absorption of:
(a) Pyridoxine
(b)✓ Biotin
(c) Thiamin
(d) Lipoic acid
(e) Ascorbic acid

23. Human being cannot synthesize ascorbic acid because they lack:
(a) Ascorbate dehydrogenase
(b) Xylulose reductase
(c) L-gulonate dehydrogenase
(d)✓ L-gulonolactone oxidase
(e) Aspartate dehydrogenase

24. When light falls on rod cells:
(a) All-cis retinal is converted into all-trans retinal
(b) 11 cis-retinal is converted into 11 trans-retinal
(c) 11 trans-retinal is converted into all trans-retinal
(d)✓ 11 cis-retinal is converted into all-trans retinal
(e) 11 cis-retinal is converted into 11cis-retinol

25. Polyunsaturated fatty acids:
(a)✓ Lowers LDL and HDL is also lowered
(b) Increase LDL but decrease HDL also
(c) Decreases LDL but HDL is also decreased
(d) Decrease IDL but HDL is also decreased
(e) Increase IDL but HDL is also decreased

26. Leptin is the hormone which:

(a) Increases the metabolic role and decreases appetite
(b) Increases the number of fat cells and decreases LDL
(c) Increases the human obesity
(d)✓ Decreases the number of cells and increases obesity
(e) Decreases the metabolic role and increases appetite

27. Intestinal bacteria can synthesize:
(a) Phyloquinone
(b) Menaquinone
(c) Menadione
(d)✓ Tocopherol
(e) Retinol

28. A high plasma calcium level decreases intestinal absorption of calcium by:
(a) Stimulating the secretion of parathormone
(b)✓ Inhibiting the secretion of parathormone
(c) Decreasing the synthesis of cholecalciferol
(d) Inhibiting the secretion of thyrocalcitonin
(e) Increasing the synthesis of cholecalciferol

29. The correct statement about serum inorganic phosphorus concentration is:
(a) It is higher in men than in women
(b) It is higher in women than in men
(c) It is higher in adults than in children
(d)✓ It is higher in children than in adults
(e) It is higher both in female children and adults

30. Consumption of iodized salt is recommended in:
(a) Patients with hyperthyroidism
(b) Patient with hypothyroidism
(c) Pregnant women
(d)✓ Goiter belt areas
(e) Lactating women

31. Copper deficiency can cause:
(a) Polycythemia
(b) Leukocytopenia
(c) Thrombocytopenia
(d)✓ Microcytic anaemia
(e) Iron deficiency anaemia

32. Zinc is a cofactor for:
(a) Acid-phosphatase
(b)✓ Alkaline phosphatase
(c) Amylase
(d) Lipase (e) Pepsin

33. In which of the following physical activity, energy consumed is maximum:
(a) Typing at high speed
(b) Swimming
(c)✓ Walking uphill
(d) Cycling (e) Tailoring

34. A young accountant consumes three cups of strong black coffee during his office hours. Strong coffee has following effects on his metabolism:
(a) Decrease effect on glucagon
(b) Provide vitamin nicotinic acid
(c) Interfere with synthesis of prostaglandins
(d) Enhance effect of insulin
(e)✓ Enhance the effect of epinephrine

NUTRITION, THERAPEUTICS AND HEALTH

Tick the correct one:

1. Too little iodine can lead to the conditions known as:
(a) Hyperthyroidism
(b) Cretinism
(c) Deafmutism
(d)✓ Hypothyroidism

2. The mineral that supports enzyme functions as co-enzymes:
(a)✓ Manganese (b) Magnesium
(c) Copper (d) Iron

3. Deficiency of the following mineral causes glucose intolerance:
(a) Copper (b) Iron
(c)✓ Chromium (d) Selenium

4. When free water loss exceeds free water intake, usually due to exercise or disease it results in:
(a) Diarrhea (b)× Dehydration
(c) Thirst (d) Sweating

5. Protein malnutrition leads to a condition called:
(a) Marasmus (b) Anaemia
(c)✓ Kwashiorkor
(d) Stroke

6. Nyctalopia is one of the first signs of deficiency of:
(a)✓ Vitamin A (b) Vitamin D
(c) Vitamin C (d) Vitamin K

7. A disease of 3D's:
(a) Beri-Beri (b) Cheilosis
(c)✓ Pellagra (d) Scurvy

8. Folic acid deficiency in pregnant woman leads to ______ in newborns:
(a)✓ Neural tube defects
(b) Alopecia
(c) Rickets (d) Pegion chest

9. A balanced diet should provide ______ % of energy from proteins:
(a) 50-60 (b) 30-40
(c) 20-30 (d)✓ 10-15

10. A systematically planned set of activities is:
(a) Nutrition counseling
(b)✓ Nutrition education
(c) Nutrition therapy
(d) Nutrition programme

11. Keep expenditure. within your family food budget is:
(a)✓ Meal planning
(b) Balanced diet
(c) Food purchase
(d) Food storage

12. The basal metabolic rate starts decreasing with:
(a) Sex (b)✓ Age
(c) Health (d) Work

13. Potable water should be free from :
(a) Salts (b) Minerals
(c)✓ Pathogenic bacteria
(d) Cleanliness

14. One method to destroy insects is:
(a)✓ Fumigation
(b) Covering
(c) Drying (d) Washing

15. Bleaching powder or chlorinated lime is very powerful in ______ drinking water:
(a) Clearing (b) Boiling
(c) Filtering (d)✓ Sterilizing

16. Water is 99.9% pure in:
(a) Storage
(b) Slow sand filrtration
(c) Rapid filtration
(d) Boiling

17. People who have no teeth require a:
(a)✓ Soft diet
(b) High fibre diet
(c) Solid diet (d) Fried foods

18. Clear fluid should not continued for more than:
(a) 4-6 hrs (b) 6-8 hrs
(c) 10-16 hrs (d)✓ 24 to 48 hrs

19. During fevers the energy requirement is increased by:
(a) 10% (b) 30%
(c)✓ 50% (d) 70%

20. There is damage to the walls of the alveoli (air sacs) in the lungs:
(a)✓ Emphysema
(b) Bronchitis
(c) Rhinitis (d) COPD

MALNUTRITION

Tick the correct one:

1. The following clinical findings can be used to make a formal diagnosis of malnutrition except:
(a) Insufficient food intake
(b) Fluid accumulation
(c) Loss of muscle mass
(d)✓ Presence of bed sores
(e) Decrease in grip strength

2. Which of the following types of older adult patients should receive a malnutrition screening?
(a)✓ All patients 65 years and older
(b) All patients 65 years and older, excluding surgical patients
(c) Patients 65 years and older at high risk of malnutrition
(d) Patients 65 years and older with an malnutrition-related index admission

3. Morbidity, mortality, and direct medical costs associated with disease-related malnutrition in the U.S. total approximately:
(a) $633 million
(b) $917 million
(c) $8 billion
(d) $74 billion (e)✓ $157billion

Which of the following is not a recommended type of data to inform whether a patient is diagnosed as malnourished?
(a) Gastrointestinal symptoms
(b)✓ Serum albumin level
(c) Body mass index
(d) Functional capacity
(e) Dietary intake

Approximately what percentage of all adult patients admitted to the hospital are at risk for malnutrition or are already malnourished?
(a) Less than 10 %
(b) 10 to 20 %
(c)✓ 20 to 50 %
(d) 50 to 70 %
(e) More than 70 %

6. How soon following a positive malnutrition screening should a patient receive a nutrition assessment?
(a) Within 12 hours
(b) Within 24 hours
(c) Within 36 hours
(d)✓ Within 48 hours
(e) Within 72 hours

7. Which of the following is not a recommended next step for malnourished patients immediately following the nutrition assessment?
(a) Confirm and record malnutrition diagnosis
(b) Consult patient on care preferences
(c) Establish nutrition care plan
(d) Provide patient education and counseling on condition
(e)✓ Automatically renew existing malnutrition-risk diet order

8. All of the following actions are appropriate following a nutrition assessment except:
(a) Documenting results in the electronic health record
(b)✓ Performing a malnutrition screening
(c) Discussing results with the patient and/or caregiver
(d) Communicating results to other care team members
(e) Recording the patient's diagnosis

9. Which of the following commonly result from malnutrition?
(a) Weight loss
(b) Falls
(c) Hospital-acquired infections
(d) Pressure ulcers
(e)✓ All of the above

10. Following a nutrition assessment, which should a patient receive a malnutrition diagnosis, if appropriate?
(a)✓ Within 12 hours

(b) Within 24 hours
(c) Within 36 hours
(d) Within 48 hours
(e) Within 72 hours

11. Following admission, when should a patient receive a malnutrition screening?
(a) Within 12 hours
(b)✓ Within 24 hours
(c) Within 36 hours
(d) Within 48 hours
(e) Within 72 hours

12. Which of the following are not data that should be collected during a nutrition assessment?
(a)✓ Family nutrition history
(b) Anthropometric measurements
(c) Biochemical data
(d) Physical exam information
(e) Food and nutrition patient history

13. Which of the following is essential to include in a malnutrition care plan?
(a) Patient preferences
(b) Treatment goals
(c) Prescribed treatment or intervention
(d)✓ All of above

14. Which of the following is true regarding a nutrition assessment?
(a) All admitted patients should receive a nutrition assessment
(b)✓ The assessment should utilize a standardized tool
(c) The assessment should be led by a nurse or nurse practitioner
(d) Limited patient/family caregiver involvement should be required

15. Which of the following is not reflective of a recommended best practice for all surgical patients:
(a) Screening for malnutrition upon admission if the patient has not received a malnutrition screening within seven days prior to admission
(b)✓ Completing malnutrition screening or assessment within 24 hours prior to surgery for patients who are in NPO (nothing by mouth) status
(c) Discussing plans to implement NPO status with patients prior to surgery
(d) Performing a nutrition assessment for patients directly following surgery
(e) Continuing to rescreen patients every seven days post-surgery, length of stay permitting

16. Which of the following is true regarding discharge planning for a patient treated for malnutrition?
(a) The patient should be given educational materials about continuing their nutrition care after discharge
(b) Recommendations should include timing for follow-up care activities
(c) Nutrition-related discharge instructions may be given independent of discharge instructions for the primary condition
(d)✓ (a) and (b) above
(e) (a), (b), and ((c)) above

17. How soon should the implementation of a malnutrition care plan begin once a patient is diagnosed as malnourished or at risk for malnutrition?
(a) Within 48 hours following creation of the malnutrition care plan
(b) Within 24 hours following creation of the malnutrition care plan
(c)✓ Immediately following creation of the malnutrition care plan
(d) Within 12 hours following creation of the malnutrition care plan
(e) Prior to end of day following

creation of the malnutrition care plan

18. Which of the following is not a validated screening tool?
(a) Malnutrition Screening Tool (MST)
(b) Mini Nutritional Assessment (MNA)
(c) Simplified Nutritional Appetite Questionnaire (SNAQ)
(d) Malnutrition Universal Screening Tool (MUST)
(e)✓ Simple Adult Nutrition Screening Tool (SANST)

19. When should a patient's initial malnutrition-risk diet order (an interim diet order initiated for patients identified as at risk based on malnutrition screening) be reevaluated?
(a) Within 48 hours of receiving the initial diet order
(b)✓ Following a nutrition assessment or reassessment
(c) Once first food or oral nutritional supplement is given
(d) Prior to discharge
(e) (b) and (c) above

20. All of the following represent factors that may lead the clinician and patient to consider modifications to a malnutrition care plan except:
(a) Patient preferences change
(b) Challenges meeting treatment goals for the patient
(c)✓ Transfer to another unit or facility
(d) Change in patient's clinical status or condition

21. According to the National Quality Forum, patient-centered care is consistent with, respectful of, and responsive to all of the following except:
(a)✓ Patient's experiences
(b) Patient's priorities
(c) Patient's goals
(d) Patient's needs
(e) Patient's values

22. What are the processes associated with nutrition intervention monitoring and evaluation as identified by the Academy of Nutrition and Dietetics?
(a) Monitor patient status, communicate results, assess timing for discharge
(b) Monitor progress, measure outcomes, evaluate changes
(c)✓ Discuss care plan goals with the patient, check the medical record, conduct follow-up assessment
(d) Plan, do, study, act

23. How soon following a malnutrition diagnosis should a patient receive a malnutrition care plan?
(a)✓ Immediately
(b) Before end of day
(c) Within 12 hours
(d) Within 24 hours
(e) Within 36 hours

24. How long before hospital discharge should malnutrition discharge planning for a given patient begin?
(a) Within 12 hours of discharge
(b)✓ Within 24 hours of discharge
(c) Within 36 hours of discharge
(d) Within 48 hours of discharge
(e) When the patient care plan is developed

25. All of the following are true regarding the use of electronic health records (EHRs) except:
(a) They should include documentation from all stages of patient care
(b) They are an effective mechanism to support care transitions
(c)✓ Documentation in the EHR is sufficient for care team coordination
(d) None of these

PREVIOUS SOLVED MCQS ASKED IN DIFFERENT EXAMS OF ONE PAPER TESTS CONDUCTED BY:

NTS ♦ PTS ♦ BTS ♦ OTS ♦ JTS ♦ GTS ♦ ETEA ♦ PPSC ♦ FPSC ♦ KPSC ♦ AJ&K PSC ♦ SPSC ♦ BPSC

Tick the correct one:

1. Americans spend only about_____ percent of their personal consumption expenditures for food to be eaten at home:
   (a) 10 (b)✓ 8
   (c) 5 (d) 3
2. Away-from-home meals and snacks now capture _____ percent of the U.S. food dollar.
   (a)✓ 45 (b) 30
   (c) 60 (d) 50
3. Food is a _____ commodity:
   (a)✓ Global (b) National
   (c) Local (d) State
4. The United States is the largest exporter of which two items?
   (a) Milk and sugar
   (b) Oranges and apples
   (c) Potatoes and carrots
   (d)✓ Cereal grains and soybeans
5. Over _____ new food products are introduced each year:
   (a)✓ 10,000 (b) 5,000
   (c) 20,000 (d) 30,000
6. The periodic table arranges elements by the number of _____ in their outermost energy levels:
   (a) Neutrons (b) Atoms
   (c) Protons (d)✓ Electrons
7. Covalent bonds are formed by the sharing of a pair of:
   (a) Atoms (b) Neurons
   (c)✓ Electrons (d) Protons
8. What is the symbol for salt?
   (a)✓ NaCl (b) C6H12C6
   (c) H2O (d) CO2
9. Hydrogen bonds are formed when a hydrogen atom is shared between:
   (a)✓ Molecules (b) Atoms
   (c) Elements (d) Neutrons
10. Which types of chemical bonds are the weakest?
    (a) Covalent
    (b)✓ Van der Waals
    (c) Ionic
    (d) None of the above
11. Organic chemistry involves molecules that contain which element?
    (a)✓ Carbon (b) Nitrogen
    (c) Oxygen (d) Calcium
12. Carbohydrates are composed of _____ and _____
    (a)✓ Carbon, water
    (b) Hydrogen, oxygen
    (c) Zinc, aluminum
    (d) Gold, calcium
13. Which of the following is the source of carbohydrates?
    (a)✓ Plant (b) Human
    (c) Animal (d) Insect
14. Vitamin _____ functions in normal blood clotting:
    (a) C (b) A
    (c) D (d)✓ K
15. Sucrose is commonly referred to as _____
    (a) Salt (b) Carbohydrate
    (c)✓ Sugar (d) Glucose
16. _____ is the most common polysaccharide added to food products:
    (a) Water (b) Salt
    (c) Glucose (d)✓ Starch
17. Identify the complex carbohydrate that cannot be digested:
    (a)✓ Fiber (b) Cellulose
    (c) Sugar (d) Fat
18. _____ makes up 14 to 17 percent of the skeleton:
    (a) Magnesium
    (b) Iron

(c)✓ Phosphorus
(d) Sodium

19. ______ functions in carbohydrate metabolism:
(a) Zinc (b)✓ Thiamin
(c) Riboflavin (d) Vitamin B

20. How many cups of water do humans require per day?
(a) 1 to 3 (b) 10 to 12
(c) 5 to 9 (d)✓ 7 to 11

21. Which micro mineral is essential for the production of the thyroid hormones?
(a) Calcium (b)✓ Iodine
(c) Fluorine (d) Magnesium

22. RDA stands for recommended ______ Allowances:
(a) Dose (b)✓ Dietary
(c) Dairy (d) D-vitamin

23. The RDA was initially established during ______
(a)✓ World War II
(b) World War I
(c) The Korean Conflict
(d) The Depression

24. The first RDA were published by a group known as the ______
(a) Food and Drug Administration
(b) National Institutes of Health
(c)✓ National Nutrition Program
(d) Environmental Protection Agency

25. The RDA is revised approximately every ______ years:
(a)✓ Five (b) Ten
(c) Two (d) Three

26. ______ percent of the adult body is made up of water:
(a) Fifty-five (b)✓ Sixty-five
(c) Seventy-five
(d) Eighty-five

27. An adult should drink ______ glasses of water per day:
(a)✓ 6 to 8 (b) 7 to 9
(c) 5 to 7 (d) 8 to 10

28. Carbohydrates and proteins provide about ______ calories per gram:
(a) 5 (b) 2
(c)✓ 4 (d) 6

29. Fat contributes about ______ calories per gram:
(a)✓ 9 (b) 10
(c) 8 (d) 7

30. Alcohol supplies about ______ calories per gram:
(a) 6 (b)✓ 7
(c) 5 (d) 4

31. Fiber is important in ______ function:
(a)✓ Bowel (b) Stomach
(c) Muscle (d) Skeletal

32. Most vitamins are measured in ______
(a)✓ Milligrams (b) Grams
(c) Liters (d) Kilograms

33. One ounce of blue cheese has ______ grams of fat:
(a) Five (b) Six
(c) Seven (d)✓ Eight

34. A twelve-ounce glass of root beer has ______ calories:
(a) 150 (b) 200
(c)✓ 165 (d) 172

35. Lowfat (1%) chocolate milk has ______ grams of carbohydrates:
(a) 15 (b)✓ 26
(c) 32 (d) 21

36. One slice of whole wheat bread is ______ percent water:
(a) 28 (b) 25
(c) 32 (d)✓ 38

37. One spear of raw broccoli contains ______ milligrams of phosphorus:
(a) 93 (b) 85
(c)✓ 100 (d) 79

38. The most important food appearance factor is ______
(a)✓ Color (b) Size
(c) Shape (d) Packaging

39. Naturally occurring ______ play a role in food coloring:
(a) Enzymes (b) Sugars

(c)✓ Pigments
(d) Carbohydrates

40. ______ or spectrophotometers can be used for measuring transparent foods:
(a) Thermometers
(b) Meters
(c) Liquid
(d)✓ Colorimeters

41. Fruits and vegetables are graded based on their ______ and ______
(a)✓ size, shape (b) color, size
(c) size, shape (d) color, size

42. ______ standards help ensure food quality:
(a) National (b)✓ Packing
(c) Quality (d) Legal

43. ______ can be achieved on the basis of density or size and shape:
(a)✓ Separation
(b) Quality
(c) Clarification
(d) Flavor

44. Sediment and microorganisms can be removed centrifugally in a ______
(a) Tube (b)✓ Clarifier
(c) Pan (d) Box

45. A ______ pump consists of a reciprocating or rotating cavity between two lobes or gears and a rotor:
(a)✓ Positive (b) Centrifugal
(c) Negative (d) Hand

46. ______ and ______ are already solid and lend themselves to sun or tray drying:
(a) Cheese, meats
(b)✓ Fruits, vegetables
(c) Cheese, vegetables
(d) Fruits, meats

47. The most common drying method is ______ drying:
(a) Freeze
(b) Sun or tray drying
(c)✓ Spray (d) Oven

48. ______ are the largest of the microorganisms but are still single cells, and some produce spores:
(a)✓ Yeast (b) Bacteria
(c) Molds (d) Ameba

49. Microbes that prefer cold temperatures are ______
(a) Mesophilic
(b) Thermophilic
(c)✓ Psychrophilic
(d) Obligative

50. Bacteria or molds that require atmospheric oxygen are ______
(a) Anaerobic (b)✓ Aerobic
(c) Mesophilic
(d) Thermophilic

51. Most bacteria are killed at ______ to ______°F, but spores are not:
(a) 150, 175 (b)✓ 180, 200
(c) 160, 200 (d) 175, 200

52. Microbial growth slows at temperatures under ______ °F:
(a) 80 (b) 70
(c) 60 (d)✓ 50

53. ______ can destroy the microorganisms and inactivate enzymes:
(a)✓ Radiation (b) Cooling
(c) Drying (d) Freezing

54. ______ is the transfer of heat from one particle to another by contact:
(a)✓ Conduction (b) Convection
(c) Radiation (d) Combustion

55. ______ heating means that the circulation of currents in one region inside a can distributes the heat to another:
(a) Conduction (b) Radiation
(c)✓ Convection (d) Slow

56. ______ is the transfer of energy in the form of electromagnetic waves:
(a) Compulsion
(b)✓ Radiation
(c) Convection (d) Conduction

57. To achieve continuous pasteurization in milk, the milk needs to be heated to 161°F for ______ seconds:
(a)✓ 15 (b) 20
(c) 10 (d) 5

58. Low-acid foods have pH values of ______ or less:
(a) 5.2 (b)✓ 4.6
(c) 3.9 (d) 4.2

59. Cool storage is considered any temperature from ______ ° to ______ °F.
(a)✓ 28, 68 (b) 18, 48
(c) 28, 78 (d) 32, 58

60. Household refrigerators usually run at ______ ° to ______ °F.
(a) 45.5, 50.2 (b)✓ 40.5, 44.6
(c) 32.3, 35.7 (d) 21.4, 26.5

61. Intimate contact occurs between the food or package and the refrigerant with ______ freezing:
(a) Blast (b) Pressure
(c) Cold (d)✓ immersion

62. The freezing point for pure water is ______ °F.
(a) 10 (b) 15
(c) 28 (d)✓ 32

63. How long will frozen orange juice last at 10°F?
(a) 14 months (b) 6 months
(c)✓ 10 months (d) 2 months

64. Which vitamin is used most commonly to control browning in fruits by enzymes?
(a) K (b)✓ C
(c) B (d) D

65. The lower limit of moisture by sun drying is Approximately ______ percent:
(a) 10 (b)✓ 15
(c) 20 (d) 30

66. Foods high in ______ or other solutes dry more slowly:
(a) Protein (b) Salt
(c)✓ Sugar (d) Water

67. ______ is when water goes from a solid to a gas without passing through the liquid phase:
(a) Transfusion
(b)✓ Sublimation
(c) Evaporation
(d) Condensation

68. Reducing the volume and weight of a product saves ______ during processing:
(a) Time (b) Energy
(c)✓ Money (d) Flavor

69. Low-temperature_evaporators are used for heat-sensitive foods:
(a) Ultrafiltration
(b) Osmosis
(c)✓ Vacuum (d) Drum

70. Sun-dried ______ are the best known of all dried foods:
(a) Tomatoes (b) Peppers
(c)✓ Raisins (d) Mushrooms

71. To dry fruits out-of-doors, humidity belowpercent is best:
(a)✓ 60 (b) 70
(c) 80 (d) 90

72. ______ are used in medical research and therapy in many hospitals and universities:
(a)✓ Radioisotopes
(b) Microwaves
(c) Satellites (d) Mice

73. Foods that are sterilized by irradiation can be stored for ______ without refrigeration:
(a)✓ Years (b) Months
(c) Weeks (d) Days

74. Microwave radiation is often called ______ radiation:
(a) Ionizing (b)✓ Nonionizing
(c) Electrical (d) Magnetic

75. Irradiation causes undesirable flavor changes in ______ products:
(a)✓ Dairy (b) Grain
(c) Meat (d) Vegetable

76. In ______ FDA approved the use of irradiation to control pathogens in

fresh and frozen red meats, such as beef, lamb, and pork:
(a) 1988 (b) 1975
(c)✓ 1997 (d) 1990

77. Fermentation is the ______ form of food preservation:
(a)✓ Oldest (b) Newest
(c) Best (d) Cheapest

78. Lactic acid bacteria with propionic acid bacteria produces ______ cheese:
(a) Cheddar (b) Mozzarella
(c)✓ Swiss
(d) Monterey jack

79. Fermentation microorganisms produce ______ and growth factors in the food:
(a) Minerals (b)✓ Vitamins
(c) Calories (d) Energy

80. Fermentation is stopped by pasteurizing and ______
(a)✓ Cooling (b) Heating
(c) Stirring (d) Settling

81. Yogurt is a semi-solid fermented milk product that originated centuries ago in ______
(a) Hungary (b)✓ Bulgaria
(c) Romania (d) Germany

82. Sour cream usually has a fat content between ______ percent:
(a) 1 and 2 (b) 3 and 8
(c) 10 and 11 (d)✓ 12 and 30

83. Bread is leavened with ______
(a)✓ Yeast (b) Sugar
(c) Salt (d) Baking soda

84. Vinegar usually has an acetic acid content of between 4 and ______ percent:
(a) 6 (b) 7
(c)✓ 8 (d) 9

85. GMO stands for ______
(a)✓ Genetically modified organism
(b) Genetically manufactured oranges
(c) Gross moldy oranges
(d) Genetically malfunctioning organisms

86. The use of food additives is controlled by the ______ clause:
(a)✓ Delaney (b) Additive
(c) Delawere (d) Supplement

87. ______ are the most heavily used additives:
(a) Minerals (b) Vitamins
(c) Gums (d)✓ Sweeteners

88. Sequestrants are ______ agents:
(a) Cheating (b)✓ Chelating
(c) Chilling (d)✓ Charcoal

89. In terms of additives, ______ include both natural and synthetic colorants:
(a) Flavors (b) Gums
(c)✓ Colors (d) Sweeteners

90. ______ dissolve in water and are made as powders, granules (small hard pieces), liquids, or other special-purpose forms:
(a)✓ Dyes (b) Lakes
(c) Sweeteners
(d) Gums

91. ______ make a food acid or sour:
(a) Flavorings (b) Texturings
(c) Colorings (d)✓ Acidulants

92. Research on food irradiation dates back to the ______
(a) 1930s (b) 1940s
(c) 1910s (d)✓ 1920s

93. ______ containers come in direct contact with the food:
(a) Secondary (b)✓ Primary
(c) Tertiary
(d) All of the above

94. The outside of the steel can is protected from rust by a thin layer of ______
(a)✓ Tin (b) Copper
(c) Aluminum (d) Silver

95. Factory equipment allows hermetically sealed sanitary steel cans to be manufactured and later sealed at the rate of ______ units per minute:
(a) 500 (b) 1,500
(c)✓ 1,000 (d) 1,200

96. Paper used for ______ cartons must come from sanitary virgin pulp:
(a)✓ Milk (b) Juice
(c) Eggs (d) Butter

97. Newer plastic materials for packaging contain cornstarch, which makes them more ______

(a) Sanitary (b) Tough
(c) Expensive
(d)✓ Biodegradable

98. Commercial laminates with as many as ______ layers can be custom-designed for packaging a specific product:
(a)✓ Eight (b) Three
(c) Ten (d) Five

99. ______ containers are versatile but often expensive:
(a) Paper (b) Glass
(c)✓ Plastic (d) Metal

100. Retortable pouches for packaging have ______ layers:
(a)✓ Three (b) Two
(c) Four (d) Five

101. The term total milk solids describes the remaining ______ percent of milk:
(a) 10–11 (b)✓ 12-13
(c) 5-7 (d) 8-9

102. In major production areas, dairies of ______ cows or more are not uncommon:
(a)✓ 1,000 (b) 500
(c) 2,000 (d) 700

103. All raw milk must be processed within ______ hours of receipt at the processing plant:
(a) 24 (b) 36
(c) 48 (d)✓ 72

104. ______ is made by churning pasteurized cream:
(a)✓ Butter (b) Ice cream
(c) Yogurt (d) Milk

105. Sweetened condensed milk has an extended shelf-life due to the addition of ______
(a) Salt (b)✓ Sugar
(c) Oxygen (d) Vinegar

106. ______ drying is the most used method for producing milk powders:
(a) Wet (b) Heat
(c)✓ Spray (d) Air

107. Acid coagulated ______ cheeses may include cottage cheese, quark, and cream cheese:
(a)✓ Fresh (b) White
(c) Aged (d) Foreign

108. ______ milk is a traditional milk fermented with *Lactobacillus acidophilus* (*LA*).
(a) Skim (b) Whole
(c)✓ Acidophilus(d) Butter

109. When frozen, about one half of the volume of ice cream is ______
(a)✓ Air (b) water
(c) Cream (d) Milk

110. All ice cream is made from a basic ______ mix.
(a) Cream (b) Milk
(c) Sugar (d)✓ White

111. One well-known substitute for a milk product is ______
(a) Cheese (b) Dried milk
(c) Powdered milk
(d)✓ Margarine

112. Carcasses are chilled for 24 to ______ hours before being graded and processed:
(a) 36 (b)✓ 48
(c) 72 (d) 96

113. Beef is normally processed at approximately ______ months of age.
(a)✓ 20 (b) 15
(c) 17 (d) 18

114. ______ at certain concentrations increases the tenderness of meat:
(a) Alcohol (b) Pepper
(c)✓ Salt (d) Sugar

115. *Trichinella spiralis* (trichinosis) is destroyed at 137°F, so an internal temperature of 160° to 170°F is definitely safe for cooking ______
(a) Chicken (b)✓ Pork
(c) Beef (d) Lamb

116. Approximately ______ percent of all poultry carcasses processed in the United States are downgraded (reduced quality) due mostly to bruises:
(a) 10 (b) 20
(c)✓ 29 (d) 45

117. The most important aspect of poultry meat is its ______ quality:
(a)✓ Eating (b) Color
(c) Texture (d) Versatile

118. ______ provides a standardized means of describing the marketability of meat, poultry, or eggs:
(a) Eating (b) Testing
(c) Handling (d)✓ Grading

119. Egg cartons from USDA-inspected plants must display a ______ date:
(a) Use-by (b) Expiration
(c)✓ Julian (d) Sell-by

120. A more prominent chalaza indicates a ______ egg:
(a) Staler (b) Healthier
(c)✓ Fresher (d) Rounder

121. The yolk or yellow portion makes up about percent of the liquid weight of the egg:
(a) 12 (b) 22
(c) 43 (d)✓ 33

122. In the grading process, eggs are examined for both interior and exterior quality and are sorted according to ______
(a) Color (b) Shape
(c)✓ Weight (d) Breed

123. A whole egg, including the albumen, contains about ______ calories:
(a) 15 (b)✓ 75
(c) 40 (d) 120

124. What percent of beef is ground for hamburger?
(a) 6 (b) 12
(c)✓ 24 (d) 48

125. What is the average level of cholesterol in an egg?
(a) 80 mg (b) 120 mg
(c)✓ 240 mg (d) 320 mg

126. ______ are covered by a crustlike shell and have segmented bodies (like insects):
(a)✓ Crustaceans
(b) Mollusks
(c) Oyster (d) Clams

127. The lobster is a common ______ used for food:
(a) Mollusk (b)✓ Crustacean
(c) Shrimp (d) Eel

128. American consumers use approximately ______ percent of the total world catch of fish and shellfish:
(a) 14 (b) 3
(c) 20 (d)✓ 8

129. On average, Americans eat about ______ pounds of fish and shellfish each year:
(a)✓ 15 (b) 5
(c) 20 (d) 30

130. Aquaculture facilities cultivate approximately ______ different species of fish and shellfish and grow a variety of aquatic plants:
(a) 20 (b)✓ 30
(c) 10 (d) 40

131. The National Marine Fisheries Service estimates that approximately ______ plants process fish and shellfish in the United States:
(a) 2,000 (b) 1.700
(c) 2,500 (d)✓ 1.500

132. ______ are sides of fish cut lengthwise away from the backbone:
(a)✓ Fillets (b) Nuggets
(c) Steaks (d) Sticks

133. ______ is done by dipping the fish in cold water and then freezing a layer before dipping the fish again:
(a) Cleaning (b) Skinning
(c)✓ Glazing (d) Dressing

134. The ______ is the large central portion of the kernel and contains most of the starch:
(a) Aleurone (b) Bran
(c)✓ Endosperm (d) Germ

135. Potato starch begins to ______ at a lower temperature than cornstarch:
(a) Burn (b)✓ Gelatinize
(c) Smell (d) Separate

136. The presence of ______ encourages the formation of a gel in cooked and cooled starch mixtures:
(a) Milk (b) Sugar
(c) Carbohydrate
(d)✓ Amylose

137. Milling a hundred pounds of wheat should yield ______ percent straight flour:
(a)✓ 72 to 75 (b) 75 to 80
(c) 88 to 90 (d) 68 to 70

138. The enrichment of bakers' white bread and rolls was made compulsory by the Federal government in ______ as a war measure to improve the nutritional status of the people:
(a) 1940 (b)✓ 1941
(c) 1942 (d) 1943

139. About ______ percent of the proteins of white flour are relatively insoluble:
(a) 55 (b) 65
(c) 75 (d)✓ 85

140. ______ flour has been used for many products as a substitute flour for individuals with an allergy to wheat flour:
(a) Cake (b)✓ Rice
(c) Bread (d) Soy

141. ______ is one of the most fermentable of all the sugars:
(a) Sucrose (b) Maltose
(c) Fructose (d)✓ Glucose

142. The most widely known bioproduct from corn is ______
(a) Glue (b)✓ Ethanol
(c) Paint (d) Lotion

143. The basic foundation of baked products is usually flour and ______
(a) Sugar (b) Eggs
(c)✓ Liquid (d) Leavening

144 ______ flour has a slightly higher percentage of gluten and a much stronger and more elastic gluten than other types of flour:
(a)✓ Bread (b) Cake
(c) Pastry (d) Rice

145. ______ flour is used in the United States to make soybean milk and low-gluten baked goods:
(a) Rizcous (b)✓ Soybean
(c) Rye (d) Wheat

146. ______ is a soft cheeselike food made by curdling fresh hot soymilk with a coagulant:
(a) Tempeh (b)✓ Tofu
(c) Yogurt (d) Cheddar

147. ______ are plant portions generally high in water and fiber:
(a) Tubers (b)✓ Stems
(c) Roots (d) Bulbs

148. ______ like onions and garlic are enlargements above the roots:
(a) Roots (b) Tubers
(c)✓ Bulbs (d) Stems

149. Under federal guidelines, a substantial number of retailers must provide nutrition information for the ______ most frequently eaten raw vegetables:
(a) 15 (b) 10
(c)✓ 20 (d) 25

150. The vacuole of a plant is composed of ______ with soluble substances dissolved within it:
(a)✓ Water (b) Juice
(c) Oil (d) Minerals

151. Fruits and vegetables get their characteristic color from:
(a)✓ Pigments (b) Sugar
(c) Sunshine (d) Osmosis

152. The quality of most fresh vegetables can be judged reasonably well by their ______ appearance:
(a) Internal (b)✓ External
(c) Leafy (d) Green

153. The use of U.S. grade standards for fruits and vegetables is ______ in most cases:
(a) Required (b) Helpful
(c) Confusing (d)✓ Voluntary

154. ______ juice is probably the most commonly processed juice:
(a) Apple (b) Lemon
(c)✓ Orange (d) Cranberry

155. ______ fruits produce ethylene gas during ripening:
(a) Nonclimacteric
(b)✓ Climacteric
(c) Orange (d) Tree

156. Fats and oils contain ______ times more energy than proteins and carbohydrates:
(a)✓ 2.25 (b) 2
(c) 1.5 (d) 3

157. ______ make up the major components of fat, butter, shortening, and oil:
(a) Compounds
(b) Composites
(c) Spingolipids

(d)✓ Triglyceride

158. Each gram of fat contains_kcal:
(a) 8 (b)✓ 9
(c) 7 (d) 6

159. The first step in the refining process of many oils is ______
(a)✓ Degumming
(b) Refining
(c) Bleaching (d) Winterization

160. ______ is a selective process that can be controlled to produce various levels of hardening:
(a) Winterization
(b) Bleaching
(c)✓ Hydrogenization
(d) Degumming

161. Monoglycerides and diglycerides are used as ______ in a variety of foods:
(a)✓ Emulsifiers (b) Flavor
(c) Calories (d) Color

162. The U.S. Surgeon General recommended that fat be reduced to ______ percent of the total dietary calories:
(a) 20 (b)✓ 30
(c) 15 (d) 25

163. One of the most common physical tests performed on fats is a determination of the ______ point:
(a) Boiling (b) Cooling
(c)✓ Melting (d) Separating

164. Candies based on a ______ sugar include rock candy, fondant, and fudge:
(a)✓ Crystalline
(b) Noncrystalline
(c) White (d) Sweet

165. Sugars and sugary foods provide a valuable and inexpensive source of ______
(a) Fat (b)✓ Energy
(c) Dessert
(d) Carbohydrates

166. The principal ingredient of candies, including chocolate, is the ______
(a) Eggs (b) Milk
(c)✓ Sweetener (d) Butter

167. The most common sweetener used in candies and chocolates is ______
(a) Glucose (b) Lactose
(c) Maltose (d)✓ Sucrose

168. When the amount of chocolate liquor is greater than ______ percent, the product is bittersweet chocolate:
(a) 10 (b) 15
(c) 20 (d)✓ 35

169. ______ chocolate is the most common form of eating chocolate:
(a)✓ Milk (b) Bittersweet
(c) Dark (d) Sweet

170. For convenience, chocolate is frequently shipped in as a ______ when intended for use by other food manufacturers:
(a) Solid (b) Gas
(c)✓ Liquid (d) Frozen

171. Fructose is a ______ that is approximately 75 percent sweeter than sucrose:
(a)✓ Monosaccharide
(b) Disaccharide
(c) Peptide (d) Polypeptide

172. ______ is the major ingredient of carbonated soft drinks:
(a)✓ Water (b) Caffeine
(c) Corn Syrup
(d) Flavoring

173. When did the world's first vitamin-fortified fruit drinks appear?
(a) 1950 (b) 1942
(c) 1940 (d)✓ 1948

174. ______ is an alcoholic beverage made from fermented grape juice:
(a)✓ Wine (b) Beer
(c) Scotch d. Whiskey

175. The science and art of growing grapes for wine is called ______
(a) Vinification
(b)✓ Viniculture
(c) Viticulture (d) Vineyard

176. Grapes for wine are harvested when they contain the optimum balance of ______ and acidity:
(a) Color (b) Size
(c)✓ Sugar (d) Alcohol

177. ______ coffee is prepared by forcing an atomized spray of very strong coffee extract through a jet of hot air

(a) Decaffeinated
(b)✓ Instant
(c) Black (d) Espresso

178. Tea is made when the processed leaves of the tea plant are infused with ______
(a) Spices (b)✓ Boiling water
(c) Herbs (d) Enzymes

179. Which organization issues the National Primary Drinking Water Regulations?
(a) FDA (b) NRA
(c)✓ EPA (d) US

180. Turbidity of water is ______
(a) Taste (b) Smell
(c)✓ Cloudiness (d) Content

181. In some food processing plants, ______ peeling is used to remove skins from soft fruit and vegetables such as tomatoes:
(a) Hand (b) Machine
(c) Boiled (d)✓ Caustic

182. A successful pollution prevention program requires frequent ______ to keep employees focused and careful:
(a) Cleaning (b)✓ Retraining
(c) Expense (d) Reprimanding

183. ______ serves as a universal solvent:
(a)✓ Water (b) Soap
(c) Bleach (d) Odor

184. ______ are the tiniest, and probably the simplest form of life:
(a)✓ Viruses (b) Parasites
(c) Fungi (d) Bacteria

185. Molds and yeast are classified as ______
(a) viruses (b) Parasites
(c)✓ Fungi (d) Bacteria

186. ______ organisms tolerate low temperatures and can grow under refrigeration:
(a) Psychrophilic
(b) Mesophilic
(c)✓ Psychrotrophic
(d) Thermotrophic

187. Most pathogenic bacteria are classified as ______
(a) Psychrotrophic
(b) Thermotrophic
(c) Psychrophilic
(d)✓ Mesophilic

188. A rule-of-thumb for the numbers of organisms required to produce toxins or to produce desired or undesired flavors is one million per ______
(a) Ounce (b) Kilogram
(c)✓ Gram (d) Pound

189. Water comprises approximately ______ percent of cleaning and sanitizing solutions:
(a) 80 to 89 (b)✓ 95 to 99
(c) 90 to 95 (d) 75 to 85

190. Which agency registers chemical sanitizers and antimicrobial agents for use on food and food product contact surfaces?
(a)✓ EPA (b) FDA
(c) USDA (d) HACCP

191. Of the microorganisms ______ are the greatest threat to food safety:
(a) Viruses (b) Parasites
(c) Fungi (d)✓ bacteria

192. Ingredients on a food label are listed in ______ order, based on weight:
(a)✓ Descending
(b) Ascending
(c) Alphabetical
(d) Chronological

193. A daily intake of_calories has been established as the daily reference value (DRV).
(a) 1,700 (b) 1,800
(c) 1,900 (d)✓ 2,000

194. The word ______ on a label, means that a product contains no amount of, or "only trivial or "physiologically inconsequential" amounts of, one or more of these components: fat, saturated fat, cholesterol, sodium, sugars, and calories:
(a) Low (b)✓ Free
(c) Lean (d) Reduced

195. The term ______ can be used on the labels of foods that can be eaten frequently without exceeding dietary guidelines for one or more of these components: fat, saturated fat, cholesterol, sodium, and calories:

(a) Free (b) Reduced
(c) Lean (d)✓ Low

196. Claims for ______ relationships between a nutrient or a food and the risk of a disease or health-related condition are now allowed on food labels:
(a) Five (b) Six
(c) Seven (d)✓ Eight

197. The DRVs for the energy-producing nutrients are calculated as fat based on ______ percent of calories:
(a)✓ 30 (b) 20
(c) 25 (d) 35

198. Worldwide, about million people are hungry:
(a) 300 (b) 500
(c)✓ 800 (d) 200

199. If all the world's undernourished people were gathered in one place, their population would be greater than every continent except ______
(a)✓ Asia (b) Europe
(c) South America
(d) North America

200. ______ implies a person eats but does not receive the amount of nutrients needed to keep the body healthy:
(a) Undernutrition
(b)✓ Malnutrition
(c) Hunger (d) Starvation

201. In developing countries, the time before ______ is most difficult for meeting nutritional needs of the people:
(a) Planting (b)✓ Harvest
(c) Winter (d) Spring

202. Enough grain is produced in the world to give every man, woman, and child ______ pounds each day:
(a) Five (b) One
(c)✓ Two (d) Three

203. According to the United Nations' publication, *Ending Hunger: An Idea Whose Time Has Come*, in the last 88 years, countries have done away with hunger; 41 of these countries have done it since ______
(a) 80, 1970 (b) 70, 1955
(c) 95, 1980 (d)✓ 75, 1960

204. Eradication of ______ is essential to improve access to food:
(a) Malnutrition
(b) Undernutrition
(c)✓ Poverty (d) Terrorism

205. The almost 6 billion people in the world today have, on average, 15 percent more food per person than the global population of 4 billion people had ______ years ago.
(a) 10 (b) 15
(c) 5 (d)✓ 20

206. The Declaration on World Food Security pledges its efforts to reducing the number of undernourished people to ______ their present level no later than 2015.
(a)✓ Half (b) One-third
(c) One-fourth
(d) Three-fourths

207. ______ prepare pies, breads, rolls, muffins, cookies, cakes, icings and frostings, and many other foods, depending on where they work:
(a) Inspectors (b)✓ Bakers
(c) Butchers (d) Chefs

208. Chefs prepare delicious meals and participate in ______ to show off chefs' talents:
(a)✓ Culinary Olympics
(b) Cooking Contests
(c) Grand Demonstrations
(d) Worldwide Classes

209. ______ play an important role in the development of new foods and nonfood uses:
(a) Bakers (b) Butchers
(c)✓ Chemists (d) Inspectors

210. On first reading, an employer will spend seconds reading a résumé:
(a) 5 to 10 (b)✓ 10 to 15
(c) 15 to 20 (d) 20 to 30

SOLVED MODEL PAPERS FOR ALL EXAMS RELATED TO FOOD SCIENCE AND NUTRITION

MODEL PAPER – 1

Tick the correct one:

1. The structure within a cell that is concerned with energy is:
(a) The cytoplasm
(b) The cell membrane
(c) The nucleus
(d)✓ The mitochondrion.

2. Which one of the following groups of chemicals is not a food nutrient?
(a) Proteins (b)✓ Enzymes
(c) Carbohydrates
(d) Vitamins

3. The chemical reaction that takes place during digestion that involves breakdown with water is:
(a)✓ Hydrolysis
(b) Hydration
(c) Oxidation (d) Regulation

4. The teeth at the front of the mouth which are used for chopping are called:
(a)✓ Incisors (b) Canines
(c) Premolars (d) Molars

5. When proteins are completely broken down the end products are:
(a) Glucose molecules
(b) Glycerol molecules
(c)✓ Amino acids
(d) Vitamins

6. The part of the alimentary tract where churning of food occurs and where the acid gastric juice is secreted is:
(a)✓ The stomach
(b) The ileum
(c) the colon
(d) The duodenum.

7. Bile and pancreatic juice are secreted into:
(a) The mouth
(b) The stomach
(c)✓ The duodenum
(d) The colon

8. Water reabsorption is the main function of:
(a) The liver (b) The pancrea
(c) The oesophagus
(d)✓ The colon

9. Movement of food along the alimentary tract is called:
(a) Secretion (b)✓ Peristalsis
(c) Absorption (d) Hydrolysis

10. The surface area of the ileum is increased by the presence of:
(a)✓ Villi (b) Enzymes
(c) Blood capillaries
(d) Chemicals

MODEL PAPER – 2

Tick the correct one:

1. Which one of the following foods does not contain carbohydrate?
(a) Potato (b) Sugar
(c)✓ Meat (d) Rice

2. Which one of the following is not a monosaccharide sugar?
(a) Glucose (b)✓ Sucrose
(c) Fructose (d) Galactose

3. Which one of the following provides the greatest energy value per gram of nutrient?
(a) Carbohydrate
(b)✓ Fat
(c) Protein (d) Water

4. When starch is cooked in moist conditions it may:
(a) Caramelise (b) Coagulate
(c) Gelatinize (d)✓ Oxidize

5. Which one of the following does not contain fat?
(a) Meat (b) Cheese
(c) Butter (d)✓ Sugar

6. The point at which a blue haze is given off from the surface of fat or oil during heating is:
(a)✓ The smoke point

(b) The melting point
(c) The flash point
(d) The plastic point

7. Proteins are made up of:
(a)✓ Amino acids
(b) Monosaccharides and disaccharides
(c) Glycerol units
(d) Vitamins and minerals

8. Which of the following is not a function of amino acids (from protein digestion) in the body?
(a) Energy production.
(b)✓ Regulation of body processes,
(c) Growth of body tissues
(d) Maintenance and repair of body tissues.

9. Which one of the following cooking processes does not rely on coagulation taking place?
(a)✓ Frying chips
(b) Making yoghurt
(c) Whipping cream
(d) Boiling an egg

10. Approximately how much protein does an average adult male require each day?
(a) 24g (b)✓ 72g
(c) 120g (d) 240g

MODEL PAPER – 3

Tick the correct one:

1. Which one of the following vitamins dissolves in water?
(a) D (b) retinol
(c)✓ Thiamin (d) K

2. Rickets may arise in children that do not receive sufficient:
(a) Vitamin A
(b) B group vitamins
(c) Vitamin C
(d)✓ Vitamin D

3. Shortage of which vitamin may lead to an increase in dental decay because of its relationship with calcium, particularly in children?
(a) A (b) B group
(c) C (d)✓ D

4. A lack of vitamin B1 thiamin may cause one of the following deficiency diseases:
(a)✓ Beri-beri (b) Pellagra
(c) Anaemia (d) Scurvy

5. Which of the following symptoms does not occur in scurvy?
(a)✓ Night blindness
(b) Bleeding in the skin
(c) Inability to recover quickly from illness
(d) Anaemia

6. Which of the following foods is not a good source of iron?
(a) Meat (b) Eggs
(c)✓ Milk (d) Liver

7. The amount of calcium required per day in adults is:
(a) 5 mg (b) 50 mg
(c) 250 mg (d)✓ 500 mg

8. Goitre of the neck may be caused if there is a lack of one of the following:
(a)✓ Iodine (b) Iron
(c) Fluorine (d) Phosphorus

9. Which one of the following minerals is often added to the water supply in order to help reduce tooth decay?
(a) Iodine (b)✓ Fluorine
(c) Chlorine (d) Potassium

10. Three of the following minerals and vitamins may be involved in anaemia of one type or another, which one is not?
(a) Vitamin (b)✓ Calcium
(c) Vitamin B12
(d) Iron

MODEL PAPER – 4

Tick the correct one:

1. Excess energy from the diet is most likely to be stored in the body as:
(a)✓ Fat (b) Fibre
(c) Salt (d) Sugar

2. The hormone which affects the metabolic rate of the body is:

(a)✓ Thyroxin (b) Insulin
(c) Glucagon
(d) None of these

3. Which one of the following people is most likely to have the highest energy requirement from food, given that they are all of similar size, and so on:
(a) A student
(b) A shop assistant
(c) An office worker
(d)✓ A farmer

4. Obesity is linked to several disorders of the body. Select one disorder from the following that may arise in a person who is significantly overweight:
(a) Cirrhosis of the liver
(b)✓ Heart disease
(c) Lung cancer
(d) Anaemia

5. Following recent nutritional guidelines, which one of the following should be *increased* in the diet?
(a) Fat (b)✓ Fibre
(c) Salt (d) Sugar

6. Which vitamin deficiency disease may be found in severe alcoholism?
(a)✓ Beri-Beri (b) Ickets
(c) Pellagra
(d) Xeroph-Thalmia

7. Constipation, haemorrhoids, diverticular disease and cancer of the bowel are associated with one of the following dietary faults:
(a) Excess fat
(b) Too much sugar
(c) Overconsumption of alcohol,
(d)✓ Lack of fibre

8. Which one of the following nutrients do adult women require in greater amounts than adult men?
(a) Calcium (b) Protein
(c)✓ Iron (d) Vitamin D

9. A vegan is:
(a) A person who eats a diet consisting mainly of meat
(b) A person who does not eat vegetables
(c)✓ A person who eats no food of animal origin
(d) A person who eats no meat but may eat milk, cheese or eggs

10. The following are examples of malnutrition that are common in Asia, Africa or Latin America. Which one is usually caused by children being weaned from their mother's milk too early?
(a)✓ Marasmus (b) Anaemia
(c) Pellagra (d) Beri-Beri

MODEL PAPER – 5

Tick the correct one:

1. Which one of the following nutrients is not present in beef?
(a) Fat (b)✓ Carbohydrate
(c) Protein (d) Iron

2. Which one of the following does not contain elastin in its muscle structure?
(a) Veal (b)✓ Cod
(c) Lamb (d) Duck

3. What is collagen converted into if meat is cooked by a slow, moist method of cooking?
(a) Fat (b) Myoglobin,
(c) Elastin (d)✓ Gelatin

4. Which of the following types of beef is likely to contain the least connective tissue?
(a) Shank (b)✓ Topside
(c) Brisket (d) Neck

5. Myoglobin, when combined with oxygen, as in a freshly-cut piece of red meat, will be:
(a) Pink (b) Brown
(c)✓ Bright red (d) Dark red

6. The amount of protein per 100g of red meat is between:
(a) 5-10g (b)✓ 15-20g
(c) 30--40g (d) 50--60g

7. Fat is a constituent of each of the

following. Which one has a significant amount of *unsaturated* fat?
(a) Chicken (b)✓ Mackerel
(c) Lamb (d) Beef

8. Which of the following is likely to deteriorate in quality the quickest if not frozen or preserved in some other way?
(a) Chicken (b) Kidney
(c) Pork (d)✓ Herring

9. For a person who had received medical advice to cut down animal fats, which of the following protein foods would you recommend?
(a) Pork (b) Salmon
(c)✓ Chicken (d) Minced beef

10. Which of the following types of offal is made up mainly of muscle tissue?
(a)✓ Heart (b) Liver
(c) Kidney (d) Sweetbread

MODEL PAPER – 6

Tick the correct one:

1. The white fibrous proteins linking the yolk to white in an egg are called:
(a) Vitelline membranes
(b) Yolk membranes
(c)✓ Chalazae
(d) The germ

2. In many dishes that involve eggs, the property of coagulation is important. In which of the following dishes is one of the other properties of eggs essential?
(a)✓ Mayonnaise
(b) Meringue
(c) Baked custard
(d) Scrambled eggs

3. The dark layer that sometimes forms around the yolk of a hard-boiled egg is caused by:
(a) Lecithin (b) Cholesterol
(c) Calcium carbonate
(d)✓ Iron sulphide

4. Which of the following nutrients is not present in eggs?
(a) Iron
(b) Riboflavin (vitamin B2)
(c)✓ Vitamin C
(d) Vitamin A

5. Which of the following describes the process by which fat droplets are dispersed in milk to prevent a cream layer forming?
(a)✓ Homogenization
(b) Hydrogenation
(c) Pasteurisation
(d) Holder process

6. Which of the following has a minimum fat content of 55 per cent?
(a) Whipped cream
(b) Single cream
(c) Double cream
(d)✓ Clotted cream

7. Which of the following types of cheese is characterised by mould growth on the surface?
(a)✓ Brie (b) Gruyere
(c) Stilton (d) Cheddar

8. Which of the following does not involve micro-organisms as an essential part of its production?
(a) Butter (b)✓ Margarine
(c) Yoghurt (d) Camembert

9. The following foods contain a high percentage of fat in their structure. Which contains the most?
(a)✓ Lard (b) Margarine
(c) Cheddar cheese
(d) Cream cheese

10. In comparison to butter and margarine, low fat spreads contain more:
(a) Protein
(b) Carbohydrate
(c) Vitamin A (d)✓ water

MODEL PAPER – 7

Tick the correct one:

1. Which one of the following is a true fruit in the biological sense?

(a) Onion (b) Celery
(c)✓ Tomato (d) Rhubarb

2. Which is the most important cereal crop grown in the UK and the USA?
(a) Maize (b)✓ Wheat
(c) Barley (d) Rice

3. The starch in a wheat grain is found mainly in the:
(a)✓ Endosperm
(b) Aleurone layer
(c) Embryo (d) bran

4. White flour has an extraction rate of approximately:
(a) 60--65% (b)✓ 70--75%
(c) 80--85% (d) 90--95%

5. Which nutrient is lost in large amounts from rice during the milling process and can lead to a deficiency disease in Asian countries for example?
(a) Riboflavin (vitamin B2)
(b) Iron
(c)✓ Thiamin (vitamin B1)
(d) Vitamin C

6. Pasta, such as spaghetti, is made from which type of flour?
(a) Patent (b) Soft
(c) Wheatmeal
(d)✓ Durum

7. A suitable temperature for the storage of most vegetables is:
(a) 0°C (b)✓ 5°C
(c) 15°C (d) 20°(C)

8. One of the following vegetables has a much higher protein content than the others:
(a) Potatoes (b) Spinach
(c)✓ Haricot beans
(d) Turnips

9. Which of the following procedures would *not* help to retain vitamin C in the preparation and cooking of potatoes?
(a) Using a small amount of cooking liquid
(b) Placing straight into boiling liquid
(c)✓ Cutting into small pieces
(d) Cooking for the shortest possible time.

10. 50 per cent or more of almonds, Brazil nuts and walnuts is:
(a)✓ Fat (b) Protein
(c) Carbohydrate
(d) Water

MODEL PAPER – 8

Tick the correct one:

1. The best conductor of heat amongst the following is:
(a) Iron
(b) Stainless steel
(c) Aluminium (d)✓ copper

2. A method of cooking in which most of the heat transfer is by conduction is:
(a) Deep fat frying
(b)✓ Shallow frying
(c) Grilling (d) roasting

3. The transfer of heat in a boiling liquid or hot air in an oven is by:
(a) Conduction
(b)✓ Convection
(c) Infra-red radiation
(d) Microwave radiation

4. Which one of the following materials reflects microwave radiation and therefore should not be used in a microwave oven?
(a) Glass (b) China
(c) Earthenware
(d)✓ Aluminium foil

5. Which vitamin is most likely to be lost from stewing beef if it is boiled for a long time?
(a) Vitamin A
(b)✓ Nicotinic acid
(c) Vitamin C (d) Vitamin D

6. In which one of the following methods of cooking is the highest cooking temperature reached?
(a) Deep fat frying
(b) Boiling

(c)✓ Roasting (d) Steaming

7. Which one of the following methods of cooking is only really suitable for thin tender foods?

(a)✓ Grilling (b) Roasting

(c) Steaming (d) Poaching

8. The temperature at which fat is used for deep frying is likely to be approximately:

(a) 150°C (b)✓ 185°C

(c) 210°C (d) 225°C

9. Which one of the following vitamins is *least* affected by cooking and preparation?

(a) Vitamin A

(b) The B group

(c) Vitamin C

(d)✓ Vitamin D

10. Which one of the following methods of cooking may cause an *increase* in the nutritional value of the food being cooked?

(a) Boiling (b) Steaming

(c)✓ Deep frying

(d) Roasting

MODEL PAPER – 9

Tick the correct one:

11. The smallest micro-organisms are:

(a) The bacteria

(b) The fungi

(c)✓ The viruses

(d) The protozoa

2. *Salmonella* has a cell shape which is:

(a) Spherical

(b)✓ Rod-shaped

(c) Comma-shaped

(d) Spiral

3. The part of the cell in bacteria which gives protection is:

(a)✓ The cell wall

(b) The cell membrane

(c) The flagella

(d) The cytoplasm

4. Yeasts reproduce by:

(a) Binary fission

(b) Production of hyphae

(c)✓ Budding

(d) Spore formation

5. Which one of the following factors for growth of micro-organisms cannot be exploited during food processing to pre- vent microbial growth on its own?

(a) Control of temperature,

(b) Removal of water

(c)✓ Removal of oxygen

(d) Control of pH conditions

6. Most micro-organisms grow best when the pH is:

(a) pH2-4 (b) pH4-6

(c)✓ pH6-8 (d) pH8-10

7. The temperature at which pathogens grow best is:

(a) 5°-10°C (b) 15°-20°C

(c) 25°-30°C (d)✓ 35°-40°C

8. Which one of the following micro-organisms is used in the production of beer?

(a) *Streptococcus thermophilis.*

(b) *Aceto-bacter*

(c) *Lactobacillus bulgaricus*

(d)✓ *Saccharomyces cerevi-siae*

9. Which one of the following cheeses is ripened by mould growth as opposed to bacterial growth?

(a)✓ Camembert

(b) Gruyere

(c) Cheddar

(d) Wensleydale.

10. In the growth pattern of a bacterial colony, which phase involves the rapid increase in numbers of bacterial cells?

(a) The stationary phase

(b)✓ The log phase

(c) The decline phase

(d) The lag phase

MODEL PAPER – 10

Tick the correct one:

1. Which one of the following factors does not affect *oxidative* rancidity?

(a)✓ Enzymes (b) Oxygen

(c) Temperature

GLOSSARY OF NUTRITION AND FOOD SCIENCES

Acute malnutrition – Also known as 'wasting', acute malnutrition is characterized by a rapid deterioration in nutritional status over a short period of time. In children, it can be measured using the weight-for-height nutritional index or mid-upper arm circumference. There are different levels of severity of acute malnutrition: moderate acute malnutrition (MAM) and severe acute malnutrition (SAM).

Adequate basic ration – An adequate ration meets the population's minimum energy, protein, fat and micronutrient requirements in emergency situations where the population is dependent on food assistance. The initial energy requirement used to design rations in emergencies is 2,100 kilocalories per person per day, which can then be adjusted to the changing local situation. The rations should be culturally acceptable and appropriate for all population subgroups (such as infants and young children).

Anaemia – Characterized by reduction in haemoglobin levels or red blood cells which impairs the ability to supply oxygen to the body's tissues, anaemia is caused by inadequate intake and/or poor absorption of iron, folate, vitamin B12 and other nutrients. It is also caused by infectious diseases such as malaria, hookworm infestation and schistosomiasis; and genetic diseases. Women and children are high-risk populations. Clinical signs include fatigue, pallor (paleness), breathlessness and headaches.

Angular stomatitis – Characterized by inflammation at the corners of the mouth, angular stomatitis is a sign of riboflavin (vitamin B2) deficiency.

Anthropometric status – The growth status of an individual's body measurements in relation to population reference values.

Anthropometry – Anthropometry is the use of body measurements such as weight, height and mid-upper arm circumference (MUAC), in combination with age and sex, to gauge growth or failure to grow.

Artificial feeding – The feeding of infants with only a breast milk substitute.

Ariboflavinosis – A clinical condition resulting from a deficiency in riboflavin (vitamin B2). Clinical signs include the presence of angular stomatitis.

Beriberi – Caused by thiamin (vitamin B1) deficiency; there are many clinically recognizable syndromes including wet beriberi (which affects the cardiovascular system), dry beriberi (which affects the nervous system) and infantile beriberi (which affects infants breastfed by women with thiamin (vitamin B1) deficiency).

Bitot's spots – Clinical sign of vitamin A deficiency, characterized by dryness of the eyes accompanied by foamy accumulations on the conjunctiva that often appear near the outer edge of the iris.

Blanket feeding – The feeding of an affected population without targeting specific groups.

Blended foods – Mixtures of milled cereals and other ingredients such as pulses, dried skimmed milk and possibly sugar and oil. Blended foods are produced by dry-blending of milled ingredients; toasting or roasting and milling of ingredients; extrusion cooking, which results in a "pre-cooked" food. The final product is milled into a fine powder and fortified with a mineral and vitamin premix and is subject to specific requirements. Examples of blended foods include wheat-soy blend and corn-soy blend.

Body mass index (BMI) – Defined as an individual's body mass (in kilograms) divided by height (in metres squared). BMI units = kg/m2. Acute malnutrition in adults is measured by using BMI.

BP 5 – An example of a fortified high-energy biscuit designed to be used in the acute phase of disaster relief operations (also used as a supplement to local food in feeding programmes for treatment of moderate malnutrition).

BP 100 – An example of a ready-to-use therapeutic food designed to be used in the rehabilitation and treatment phase of severely malnourished children and adults.

Breast milk substitute – Any food marketed or otherwise represented as a partial or total replacement for breast milk, whether or not suitable for that purpose. (Communications note: UNICEF avoids all photo images and video images of infants being bottle-fed. We do not mention infant formula in our communications materials, as UNICEF promotes exclusive breastfeeding in the first six months of life, even in emergencies.)

Chronic malnutrition – Chronic malnutrition, also known as 'stunting', is a form of growth failure which develops over a long period of time. Inadequate nutrition over long periods of time (including poor maternal nutrition and poor infant and young child feeding practices) and/or repeated infections can lead to stunting. In children, it can be measured using the height-for-age nutritional index.

The Code – The International Code of Marketing of Breast-Milk Substitutes adopted by the World Health Assembly (WHA) in 1981, and regularly updated through subsequent WHA resolutions.

Colostrum – The first thick, yellow milk secreted by the breasts in the first few days after childbirth. Colostrum has many benefits: it contains antibodies and other protective proteins that protect against infections and help regulate a baby's developing immune system; it contains growth factors, which help the infant's intestine to mature and function; it is rich in Vitamin A, Vitamin K and other nutrients; and it helps to prevent or reduce jaundice, which can be common among babies.

Community-based management of acute malnutrition (CMAM) – This approach aims to maximize coverage and access of the population to treatment of severe acute malnutrition by providing timely detection and treatment of acute malnutrition through community outreach and outpatient services, with inpatient care reserved for more critical cases. CMAM includes: inpatient care for children with SAM with medical complications and infants under 6 months of age with visible signs of SAM; outpatient care for children with SAM without medical complications; and community outreach for early case detection and treatment.

Complementary feeding – The use of age-appropriate, adequate and safe solid or semi-solid food in addition to breast milk or a breast milk substitute. The process starts when breast milk or infant formula alone is no longer sufficient to meet the nutritional requirements of an infant. It is not recommended to provide any solid, semi-solid or soft foods to children less than 6 months of age. The target range for complementary feeding is generally considered to be 6–23 months.

Corn soya blend or corn soy blend (CSB) – A type of blended food.

Cretinism – A severe mental and physical disability that occurs in the offspring of women who have severe iodine deficiency, which occurs during the first trimester of pregnancy.

'Dry' feeding – Food provided in the form of a dry (take-home) ration.

Early warning system – An information system designed to monitor indicators that may predict or forewarn of impending food shortages, worsening of the nutritional situation or famine.

Early initiation of breastfeeding – Breastfeeding within one hour of birth

Emergency school feeding – Food

distribution at schools provided as a cooked meal or a supplement in school or as a take-home ration. It aims to relieve short term hunger and improve school attendance and performance.

Enrichment – Also known as 'fortification', this is the process of adding micronutrients, or restoring those lost during processing, to food products. Examples include the enrichment of wheat flour with vitamin B1, niacin and iron.

Exclusive breastfeeding – An infant receives only breast milk and no other liquids or solids, not even water, with the exception of oral rehydration salts (ORS) or drops or syrups consisting of vitamins, mineral supplements or medicines. UNICEF recommends exclusive breastfeeding for infants aged 0-6 months.

F-75 and F-100 – Examples of therapeutic milks. F-75 is a 'starter' milk used during the initial management (Phase 1) of severe acute malnutrition. F100 is a 'catch-up' milk used during the rehabilitation phase (Phase 2) of severe acute malnutrition. These therapeutic milks come in powder form and are reconstituted. They also contain fats, sugar, micronutrients and other nutrients. Both F-75 and F-100 must be given under medical supervision.

Famine – Famine is a highly technical term, to be used under very specific circumstances. Different definitions of famine exist as there are different classifications that are used to measure levels of food insecurity and that set cut-off limits for determining different phases of food security. These classifications typically use indicators such as anthropometrics and mortality. One example is the Famine Magnitude scale of Howe and Devereux which classifies the magnitude of famines: food secure, food insecure, food crisis, famine, severe famine, and extreme famine based on livelihood measures and measurements of mortality and child malnutrition to categorize a situation. Using this scale, famine conditions are defined as crude mortality rate >=1 but < 5/10,000/day, and/or Wasting > =20 per cent but < 40 per cent, and/or prevalence of oedema. Another example is the Integrated Food Security and Humanitarian Phase Classification (IPC) system, which classifies phases into generally food secure, moderately/borderline food insecure, acute food and livelihood crisis, humanitarian crisis and famine/human catastrophe. Here a famine/human catastrophe is classified by the key reference outcomes: crude mortality rate > 2/10,000/day; acute malnutrition > 30 per cent; disease pandemic; food access/availability extreme entitlement gap, much below 2,100 kilocalories per person per day; water access / availability. < 4 litres / person / day; destitution/displacement: large scale, concentrated; civil insecurity widespread; high intensity conflict; livelihood assets: effectively complete loss.

Follow-on/follow-up formula – Breast milk substitute formulated for infants aged 6 months or older.

Food fortification – The addition of micronutrients to a food during or after processing to amounts greater than were present in the original food product. This is also known as 'enrichment'.

Food security – Access by all people at all times to sufficient, safe and nutritious food needed for a healthy and active life. (1996 World Food Summit definition).

Food taboos – Foods that are not eaten for cultural or religious reasons.

Fortificant – Vitamins and minerals added to fortify foods.

General food distribution or general food ration – Distribution of a combination of food commodities to an emergency-affected population.

Global acute malnutrition (GAM) – The total number of children aged between 6 and 59 months in a given population who have moderate acute malnutrition, plus those who have severe acute malnutrition. (The word 'global' has no geographic meaning.) When GAM is equal to or greater than 15 per cent of the population, then the nutrition situation is defined as 'critical' by the World Health Organization (WHO). In emergency situations, the nutritional status of children between 6 and 59 months old is also used as a proxy to assess the health of the whole population.

Goitre – Swelling of the thyroid gland in the neck caused by iodine deficiency.

Growth monitoring and promotion – Individual-level assessment where the growth of infants and young children are monitored over time in order to identify and address growth faltering and growth failure.

Height-for-age nutritional index – A measure of stunting or chronic malnutrition.

High-energy peanut butter paste – A common ready-to-use therapeutic food (RUTF or RUF) which is a high protein and high-energy peanut-based paste that tastes slightly sweeter than peanut butter. It requires no water for preparation or refrigeration and has a two-year shelf life, making it easy to deploy in difficult conditions to treat severe acute malnutrition. It is distributed under medical supervision, predominantly to parents of malnourished children whose nutritional status has been assessed by a doctor or a nutritionist. (Communications note: Plumpy'nut is one well-known brand of RUTF but the Supply Division notes that we should not use that brand name when talking about RUTFs because it would be to the detriment of other brands, resulting in a less competitive market for RUTFs. It is better to just say high-energy peanut butter paste).

Home-modified animal milk – A breast milk substitute for infants up to 6 months old prepared at home from fresh or processed animal milk, suitably diluted with water and with the addition of sugar and micronutrients.

Home-based care – Care and/or nutrition interventions given to individuals in their homes.

Infant and young child feeding (IYCF) – Term used to describe the feeding of infants (less than 12 months old) and young children (12–23 months old). IYCF programmes focus on the protection, promotion and support of exclusive breastfeeding for the first six months, on timely introduction of complementary feeding and on continued breastfeeding for two years or beyond. Issues of policy and legislation around the regulation of the marketing of infant formula and other breast milk substitutes are also addressed by these programmes.

Infant feeding in emergencies – Infant and young child feeding in emergencies is concerned with protecting and supporting optimal infant and young child feeding for children under the age of 2 years in emergency situations. This includes protection and support for early, exclusive and continued breastfeeding, reducing the risks of artificial feeding for non-breastfed infants, and appropriate, timely and safe complementary feeding. Infants who are not breastfed and who are particularly at risk in emergency settings also need protection and support.

Infant formula – A breast milk substitute formulated industrially in accordance with applicable Codex Alimentarius standards. The Codex Alimentarius Commission was established in 1963 by the Food and Agriculture Organization (FAO) and WHO to protect the health of consumers and to ensure fair practices in the international food trade.

Infant feeding equipment – Bottles, teats, syringes and baby cups with or without lids and/or spouts

Inpatient care – Care which requires patients to be admitted to a health facility. Patients with complicated severe malnutrition (metabolic disturbances) are treated in inpatient care before continuing treatment in outpatient care. Examples of inpatient care include are 'Phase I', 'therapeutic feeding unit', 'therapeutic feeding centre' or 'stabilization centre'.

Iodine deficiency disorders – A range of abnormalities which result from iodine deficiency, including reduction of IQ (on average a 10 to15 per cent reduction), goitre and cretinism.

Kwashiorkor – Clinical form of acute malnutrition resulting from protein-energy deficiency characterized by oedema (swelling). Children with kwashiorkor typically have bilateral pitting oedema, reduced fat and muscle tissue, skin lesions (dermatosis) and frequent skin infections, and appear apathetic and lethargic.

Low birthweight – A birthweight of less than 2,500 grams.

Macronutrients – Fat, protein and carbohydrates that are needed for a wide range of body functions and processes.

Malnutrition – A broad term commonly used as an alternative to 'undernutrition', but which technically also refers to overnutrition. People are malnourished if their diet does not provide adequate nutrients for growth and maintenance or if they are unable to fully utilize the food they eat due to illness (undernutrition). They are also malnourished if they consume too many calories (overnutrition).

Marasmus – Clinical form of acute malnutrition characterized by severe weight loss or wasting. Marasmic children are extremely thin and typically have grossly reduced fat and muscle and thin flaccid skin, and are irritable

cronutrients – Essential vitamins and minerals required by the body in miniscule amounts throughout the life cycle.

Micronutrient deficiency diseases – When certain micronutrients are severely deficient owing to insufficient dietary intake, insufficient absorption and/or suboptimal utilization of vitamins or minerals, specific clinical signs and symptoms may develop. Scurvy, beriberi and pellagra are classic examples of nutritional diseases.

Micronutrient malnutrition – Suboptimal nutritional status caused by a lack of intake, absorption or utilization of one or more vitamins or minerals. Excessive intake of some micronutrients may also result in adverse effects.

Mid-upper-arm circumference – The circumference of the mid-upper arm is measured on a straight left arm (in right-handed people) midway between the tip of the shoulder (acromion) and the tip of the elbow (olecranon). It measures acute malnutrition or wasting in children aged 6–59 months. The mid-upper-arm circumference (MUAC) tape is a plastic strip, marked with measurements in millimetres. MUAC < 115mm indicates that the child is severely malnourished; MUAC < 125mm indicates that the child is moderately malnourished.

Moderate acute malnutrition – Defined as weight-for-height between minus two and minus three standard deviations from the median weight-for-height for the standard reference population.

Multiple micronutrient powder – Comes in a little sachet to sprinkle on food which contains most of the micronutrients needed. Proposed for children aged 6–23 or 59 months to improve the quality of complementary food, or for pregnant mothers.

Night blindness – Inability to see well in the dark or in a darkened room. An early sign of vitamin A deficiency.

Nutritional index – Different nutritional indices measure different aspects of growth failure (wasting, stunting and underweight) and thus have different uses. The main nutritional indices for children are weight-for-height, MUAC-for-age, sex and height, height-for-age, weight-for-age, all compared to values from a reference population. In emergency situations, weight-for-height (wasting) is commonly used for nutritional assessments.

Nutritional requirements – The amount of energy, protein, fat and micronutrients needed for an individual to sustain a healthy life.

Nutritional screening – Individual-level assessment where each person is measured in order to identify and refer those needing further check-ups or such services as supplementary or therapeutic feeding.

Nutritional status – The growth or micronutrient status of an individual.

Nutrition surveillance – The regular collection of nutrition information that is used for making decisions about actions or policies that will affect nutrition. In emergency situations, nutritional surveillance is part of early warning systems to measure changes in nutritional status of populations over time to mobilize appropriate preparation and/or response.

Nutrition survey – Survey to assess the severity, extent, distribution and determinants of malnutrition in a population. Nutrition surveys in emergencies assess the extent of under nutrition or estimate the numbers of children who might require supplementary and/or therapeutic feeding or other nutritional support.

Oedema – Bilateral oedema (fluid retention on both sides of the body), caused by increased fluid retention in extracellular spaces, is a clinical sign of severe acute malnutrition. There are different clinical grades of oedema: mild, moderate and severe.

Outpatient therapeutic care programme – Outpatient care for treatment and management of severe acute malnutrition that connects treatment in the health facility, but does not require admission to the health facility. Treatment is carried out while patients remain at home, and involves intermittent health facility visits and/or community outreach.

Pellagra – Caused by niacin (Vitamin B3) deficiency, which affects the skin, gastrointestinal tract and nervous systems; sometimes called 'the 3 Ds': dermatitis, diarrhoea and dementia.

Public nutrition approach – Broad population-based approach to address nutritional problems that explicitly recognizes the complex and coexisting causes of malnutrition, the different types of interventions to address nutrition, which range from the individual to population level, as well as the broader social, political and economic factors that determine nutritional status.

Rapid nutrition assessment – An assessment which is carried out quickly to establish whether there is a major nutrition problem and to identify immediate needs of the population. Screening individuals for inclusion in selective feeding programmes is also a form of rapid nutrition assessment.

Ration – The ration or 'food basket' usually consists of a variety of basic food items (cereals, oil and pulses) and, possibly, additional foods known as complementary foods (meat or fish, vegetables and fruit, fortified cereal blends, sugar, condiments) that enhance nutritional adequacy and palatability.

Ready-to-use infant formula – A type of breast milk substitute that is nutritionally balanced and packed in a form that is ready to use for infants who do not have the option of being breastfed.

Ready-to-eat meals – A type of emergency ration that is a nutritionally balanced, readyto-eat and complete food. They generally come in two forms: as compressed, vacuumpacked bars or as tablets.

Ready-to-use supplementary foods – Specialized ready-to-eat, portable, shelf-stable products, available as pastes, spreads or biscuits, that meet the supplementary nutrient needs of those who are not severely malnourished. They are increasingly used for the management of moderate acute malnutrition.

Ready-to-use therapeutic foods – Specialized ready-to-eat, portable, shelf-stable products, available as pastes, spreads or biscuits that are used in a prescribed manner to treat children with severe acute malnutrition.

Recommended daily allowance – The average daily dietary intake of nutrients that is sufficient to meet the nutrient requirements of nearly all (approximately 98 per cent of) healthy individuals in a given population. For calories, the recommended daily allowance is based on the mean for a given population.

Reference population – Also known as 'growth standards'; based on surveys of healthy children, whose measurements represent an international reference for deriving an individual's anthropometric status.

Rehabilitation phase – The third phase of treatment for complicated severe acute malnutrition or initial treatment for uncomplicated severe acute malnutrition. It aims to promote rapid weight gain and to help the individual regain strength through regular feeds of high-nutrient and energy dense foods and is ideally implemented as outpatient treatment.

Re-lactation – Induced lactation (breastfeeding) in someone who has previously lactated.

Replacement feeding – For infants who are not being breastfed, the provision of a nutritionally adequate diet until the age at which they can be fully fed on family foods.

Resomal – Oral rehydration solution for children with severe acute malnutrition.

Rickets – Caused by vitamin D deficiency; rickets affects bone development; severe cases result in bowing of the legs.

Scurvy – Caused by vitamin C deficiency; typical signs of scurvy include swollen and bleeding gums and the slow healing of wounds or reopening of old wounds.

School feeding – Provision of meals or snacks to schoolchildren to improve nutrition and promote school attendance.

Seasonality – Seasonal variation of various factors – such as disease, sources of food and the agricultural cycle – that affect nutritional status.

Selective feeding programmes – Supplementary feeding or therapeutic care programmes. Sentinel site – Selected community or service delivery site, used to detect changes in context, programme or outcome variable. Communities or areas are selected for a number of reasons, such as vulnerability to food insecurity in times of stress. Sentinel sites can range from health centres to villages to districts.

Severe acute malnutrition – A result of recent (short-term) deficiency of protein, energy, and minerals and vitamins leading to loss of body fats and muscle tissues. Acute malnutrition presents with wasting (low weight-for-height) and/or the presence of oedema (i.e., retention of water in body tissues). Defined for children aged 6–60 months, as a weight-for-height below – 3 standard deviations from the median weight-for-height for the standard reference population or a mid-upperarm circumference of less than 115 mm or the presence of nutritional oedema or marasmic-kwashiorkor.

Stabilization centre – Inpatient care facility established for the treatment of severe acute malnutrition with complications.

Stabilization phase – The initial phase of inpatient treatment for complicated severe acute malnutrition. It is intended to stabilize and readjust the patient's metabolism through the use of special foods (F-75) and medical treatment and allows for close monitoring of the patient and for urgent therapy if complications develop. It is also known as 'Phase I' or the 'initiation phase'.

Stunting – Technically defined as below minus 2 standard deviations from median height-for-age of a reference population.

See Chronic malnutrition.

Supplementary feeding programme – There are two types of supplementary feeding programmes. Blanket supplementary feeding programmes target a food supplement to all members of a specified at-risk group, regardless of whether they have moderate acute malnutrition or not. Targeted supplementary feeding programmes provide nutritional support to individuals with moderate acute malnutrition. To be effective, targeted supplementary feeding programmes should always be implemented when there is sufficient food supply or an adequate general ration for the general population, while blanket supplementary feeding programmes are often implemented when general food distribution for the household has yet to be established or is inadequate for the level of food security in the population. The supplementary ration is meant to be additional to, and not a substitute for, the general ration.

Supplementary suckling – A technique used to induce lactation by providing therapeutic milk to the infant while he or she is suckling. When suckling, the child gets therapeutic milk from a tube attached to the mother's nipple. Suckling stimulates breastmilk production, which eventually replaces therapeutic milk.

Supplementation (micronutrient) – Provision of micronutrients via a tablet, capsule, syrup or powder.

Targeting – Coverage of an intervention to specific population groups, identified as the most vulnerable.

Therapeutic care – Feeding and medical treatment to rehabilitate severely acutely malnourished children.

Therapeutic feeding programme – A programme that admits and treats severe acute malnutrition either at the health facility level or on an outpatient basis.

Therapeutic milks – Milk-based products supplemented by fats, sugar, micronutrients and other nutrients used in the treatment of severe acute malnutrition. Examples include F-75 and F-100, although other brands and local-based therapeutic milks exist.

Therapeutic paste – A generic term referring to lipid-based products used in the treatment of severe acute malnutrition.

Transition phase – Second phase of inpatient treatment for complicated severe acute malnutrition. It is intended to adapt progressively to the large amounts of food and nutrients that will be offered in the rehabilitation phase (outpatient or inpatient), and to monitor the patient.

Undernutrition – An insufficient intake and/or inadequate absorption of energy, protein or micronutrients that in turn leads to nutritional deficiency.

Underweight – Wasting or stunting or a combination of both, measured through the weight-for-age nutritional index.

Vitamin A (Retinol): Vitamin A is a fat-soluble vitamin with multiple functions in the body. It helps cells differentiate, an essential part of cell reproduction. Cells that are not fully differentiated are more likely to undergo precancerous changes. It is a central component for healthy vision; vitamin A nourishes cells in various structures of the eye and is required for the transduction of light into nerve signals in the retina. It is required during pregnancy, stimulating normal growth and development of the fetus by influencing genes that determine the sequential growth of organs in embryonic development. It influences the function and development of sperm, ovaries, and placenta and is a vital component of the reproductive process.

Vitamin B_1 (Thiamin): Vitamin B1 is a water-soluble vitamin that the body requires to break down carbohydrates, fat, and protein. Every cell of the body requires vitamin B1 to form adenosine triphosphate (ATP). Vitamin B1 is also essential for the proper functioning of nerve cells.

Vitamin B$_2$ (Riboflavin): Vitamin B2 is a water-soluble vitamin that helps the body process amino acids and fats, activate vitamin B6 and folic acid, and convert carbohydrates to adenosine triphosphate (ATP). Under some conditions, vitamin B2 can act as an antioxidant.

Vitamin B$_3$ (Niacin): Vitamin B3 is required for cell respiration and helps release the energy in carbohydrates, fats, and proteins. It also supports proper circulation and healthy skin, functioning of the nervous system, and normal secretion of bile and stomach fluids. It is used in the synthesis of sex hormones, treating schizophrenia and other mental illnesses, and as a memory-enhancer.

Nicotinic acid (but not nicotinamide) supplementation improves the blood cholesterol profile, and has been used to flush the body of organic poisons, such as certain insecticides. People report more mental alertness when this vitamin is in sufficient supply.

A shortage of niacin may be indicated with symptoms such as canker sores, depression, diarrhea, dizziness, fatigue, halitosis, headaches, indigestion, insomnia, limb pains, loss of appetite, low blood-sugar, muscular weakness, skin eruptions, and inflammation.

Vitamin B$_5$ (Pantothenic Acid): Vitamin B5 is a water-soluble vitamin involved in the Kreb's energy production cycle and is needed for the production of acetylcholine, a neurotransmitter. Vitamin B5 also triggers the adrenal glands, is essential in transporting and releasing energy from fats, and enables the synthesis of cholesterol, vitamin D, and steroid hormones. Pantethine—a vitamin B5 byproduct—has been shown to lower cholesterol and triglycerides in the blood.

Vitamin B$_6$ Vitamin B6 is a water-soluble vitamin and is part of the vitamin B complex. Vitamin B6 plays a role in the synthesis of antibodies by the immune system, which are needed to fight many diseases. It helps maintain normal nerve function and also acts in the formation of red blood cells. Vitamin B6 is also required for the chemical reactions needed to digest proteins. The higher the protein intake, the more the need for vitamin B6.

Large doses of vitamin B6 can cause neurological disorders and numbness. Deficiency of this vitamin can cause mouth and tongue sores, irritability, confusion, and depression. Vitamin B6 deficiency is uncommon in the United States.

Vitamin B$_9$ (Folate): Vitamin B9, also known as folic acid, is a B vitamin necessary for cell replication and growth. Folic acid helps form building blocks of DNA, which holds the body's genetic information, and building blocks of RNA, needed for protein synthesis. Folic acid is most important, then, for rapidly growing tissues, such as those of a fetus, and rapidly regenerating cells, like red blood cells and immune cells. Folic acid deficiency results in an anemia that responds quickly to folic acid supplements.

The need for folic acid increases considerably during pregnancy. Deficiencies of folic acid during pregnancy are associated with low birth weight and an increased incidence of neural tube defects in infants. Most doctors, many other health-care professionals, and the March of Dimes recommend that all women of childbearing age supplement with 400 mcg per day of folic acid. Such supplementation may protect against the formation of neural tube defects during the time between conception and when pregnancy is discovered.

Vitamin B$_{12}$ (Cobalamine): Vitamin B12 is a water-soluble vitamin needed for normal nerve cell activity, DNA replication, and production of the mood-affecting substance SAMe (S-adenosyl-L-methionine). Vitamin B12 acts with folic acid and vitamin B6 to control homocysteine levels. An excess of homocysteine has been linked to an increased risk of coronary disease, stroke, and other diseases such as osteoporosis and Alzheimer's.

Vitamin B12 deficiency causes fatigue. A small trial reported that even some people who are not deficient in B12 showed a marked increase in energy after vitamin B12 injections. However, the relationship between B12 injections and the energy level of people who are not vitamin B12-deficient has been rarely studied. Oral B12 supplements are unlikely to achieve the same results as injectable B12, because the body has a relatively poor absorption rate for this vitamin.

Vitamin C (Ascorbic Acid): Vitamin C is an essential water-soluble vitamin that has a wide range of functions in the human body.

One of vitamin C's important functions is acting as an antioxidant, protecting LDL cholesterol from oxidative damage. When LDL is damaged, the cholesterol appears to lead to heart disease, but vitamin C acts as an important antioxidant protector of LDL. Vitamin C may also protect against heart disease by reducing the stiffness of arteries and the tendency of platelets to coagulate in the vein.

The antioxidant properties also protect smokers from the harmful effects of free radicals. Small doses of vitamin C taken by nonsmokers before being exposed to smoke have been shown to reduce the free radical damage and LDL cholesterol oxidation associated with exposure to cigarette smoke.

Vitamin C has a range of additional functions. It is needed to make collagen, a substance that strengthens many parts of the body, such as muscles and blood vessels, and plays important roles in healing and as an antihistamine. Vitamin C also aids in the formation of liver bile, which helps to detoxify alcohol and other substances. Evidence indicates that vitamin C levels in the eye decrease with age and that vitamin C supplements prevent this decrease, lowering the risk of developing cataracts.

Vitamin C has been reported to reduce activity of the enzyme aldose reductase, which theoretically helps protect people with diabetes. It may also protect the body against accumulation or retention of the toxic mineral lead. People with recurrent boils (furunculosis) may have defects in white-blood-cell function that are correctable with vitamin C supplementation.

Vitamin D (Cholecalciferol): Vitamin D is a fat-soluble vitamin that helps maintain blood levels of calcium, by increasing absorption from food and reducing urinary calcium loss. Both functions help keep calcium in the body and therefore spare the calcium that is stored in bones. Vitamin D may also transfer calcium from the bone to the blood, which may actually weaken bones. Though the overall effect of vitamin D on the bones is complicated, some vitamin D is certainly necessary for healthy bones and teeth.

Vitamin D is also produced by the human body during exposure to the ultraviolet rays of the sun. However, seasonal changes, latitude, time of day, cloud cover, smog, and sunscreen can all affect UV exposure. Vitamin D deficiency is more common in northern latitudes, making vitamin D supplementation more important for residents of those areas.

Vitamin D plays a role in immunity and blood cell formation and also helps cells differentiate—a process that may reduce the risk of cancer. From various other studies, researchers have hypothesized that vitamin D may protect people from multiple sclerosis, autoimmune arthritis, and juvenile diabetes. Vitamin D is also necessary to maintain adequate blood levels of insulin. Vitamin D receptors have been found in the pancreas, and some evidence suggests that supplements may increase insulin secretion for some people with adult-onset diabetes.

Vitamin E (Tocopherol): Vitamin E is an antioxidant that protects cell membranes and other fat-soluble parts of the body, such as LDL cholesterol (the "bad" cholesterol), from damage. Several studies have reported that supplements of natural vitamin E help reduce the risk of heart attacks.

Vitamin E also plays some role in the body's ability to process glucose. Some trials suggest that vitamin E may help in the prevention and treatment of diabetes.

In the last decade, the functions of vitamin E have been further clarified. In addition to its antioxidant functions, vitamin E has now been shown to directly affect inflammation, blood cell regulation, connective tissue growth, and genetic control of cell division.

Vitamin K (Phylloquinone): Vitamin K is necessary for proper bone growth and blood coagulation. Vitamin K accomplishes this by helping the body transport calcium. Vitamin K is used to treat overdoses of the drug warfarin. Also, doctors prescribe vitamin K to prevent excessive bleeding in people taking warfarin but requiring surgery.

There is some evidence that vitamin K2 (menadione), not vitamin K1 (phylloquinone; phytonadione), may improve a group of blood disorders known as myelodysplastic syndromes (MDS). These syndromes carry a dramatically increased risk of developing acute myeloid leukemia. Comprehensive trials of K2 for MDS are needed to confirm these auspicious early results.

Vulnerability – The characteristics of a person or group in terms of their capacity to anticipate, cope with, resist and recover from the impact of a natural (or human-made) hazard.

Wasting – Technically defined as below minus 2 standard deviations from median weight-for-height of a reference population. See Acute malnutrition.

Weight-for-age – Nutritional index, a measure of underweight (or wasting and stunting combined).

Weight-for-height – Nutritional index, a measure of acute malnutrition or wasting.

'Wet' feeding – Food aid provided in the form of a cooked ration to be consumed on site.

Wet nursing – Breastfeeding by a woman of a baby that is not her own.

Wheat soy blend (WSB) – A blended food.

Xerophthalmia – 'Dry eyes' which can be caused by vitamin A deficiency. Other eye signs of vitamin A deficiency related to the eyes include night blindness, Bitot's spots and corneal ulceration.

Zinc – Zinc is an essential mineral with a wide variety of functions within the human body. Zinc is a component of over 300 enzymes needed to repair wounds, maintain fertility in adults and growth in children, synthesize protein, help cells reproduce, preserve vision, boost immunity, and protect against free radicals, among other functions.

In some trials, zinc lozenges have reduced the duration of colds in adults, though they have not been demonstrated to be effective in children. The ability of zinc to shorten colds may be due to a direct, localized antiviral action in the throat. A small, preliminary trial has also shown zinc sulfate to be effective for contact dermatitis, a skin rash caused by contact with an allergen or irritant.

Zinc can reduce the body's ability to utilize copper, another essential mineral. The ability to interfere with copper makes zinc an important therapy for people with Wilson's disease, a genetic condition that causes copper overload. In healthy individuals, however, this effect is best offset by copper supplementation.
